Understanding the Development of the Organisational Capabilities in Micro Manufacturing Enterprises

Guven Gurkan Inan

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ABSTRACT

Competitiveness has been increasing dramatically in last few decades. Practitioners and researchers investigated new ways to gain competitive advantage in competitive markets. Organisational capability theories are developed to understand role of internal resources of organisations in competition and organisational capabilities are seen the source of competitive advantage in management literature. Great amount of research has been conducted in the field of organisational capabilities focusing mainly on Large enterprises and some on SMEs. SMEs are seen as the backbone of the economies and the importance of SMEs are well documented in literature. Micro enterprises are included the definition of SMEs but researchers ignored the Micro enterprises due to the difficulties of data collection and there is no research in organisational capabilities field in the context of micro enterprises. In this research, it was aimed to understand development of organisational capabilities in micro enterprises. Organisational capability theories are reviewed and a theoretical framework was developed with a system perspective. A conceptual framework was developed for Micro enterprises to understand relevance of and development process of organisational capabilities. An action research methodology is used to understand the development of organisational capabilities in Micro enterprises. Finally, relevant and irrelevant organisational capabilities to Micro enterprises were identified. Additionally, development processes of organisational capabilities in Micro enterprises were identified.

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Edinburgh, October 2016
G. Gurkan Inan

…dedicated for my son…

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ABBREVIATIONS

CI	Continuous Improvement
CRM	Customer Relationships Management
DMAIC	Define-Measure-Analyse-Improve-Control
FIFO	First-in, First-out
JIT	Just-In-Time
KOSGEB	Kucuk ve Orta Olcekli Isletmeleri Gelistirme ve Destekleme Idaresi Baskanligi
NoB	Number of Businesses
PDCA	Plan-Do-Check-Act
RBV	Resource-Based View
SMED	Single-Minute Exchange of Die
SMEs	Small and Medium Enterprises
TPM	Total Productive Maintenance
TQM	Total Quality Management
VRIN	Valuable, Rare, In-imitable, Non-substitutable
VSM	Value Stream Mapping
WIP	Work in Progress

1 INTRODUCTION

1.1 Purpose of Research

In management literature, organisational capability theories are seen as an important source of competitive advantage. Conceptual and empirical research has been conducted to understand organisational capability theories. In current literature, researchers are mainly focused on large enterprises and some of this research is conducted in the context of Small and Medium Enterprises (SMEs). Even though micro enterprises are included as one type of SME, micro enterprises are neglected by researchers due to the high sample size and data collection processes. There is no research in the context of micro enterprises in the organisational capability theories literature. Thus, the purpose of this research is *to explore the applicability of organisational capability theories in the context of micro enterprises*. The following sections outline the importance of micro enterprises and SMEs to economies, organisational capability theories and researcher motivation for this research.

1.2 Background

Definition of SMEs is different for each country based on their industrial and economic structure. Revenue, payroll, total assets of enterprises, number of employees are key indicators used to differentiate micro, small, medium and large enterprises. The number of employees is mostly used as an indicator to define SMEs. For example, the European Commission defines SMEs in three groups, Medium, Small and Micro and their employee numbers are, respectively, less than 250, 50 and 10; conversely, China defines SMEs as less than 2000 employees. Table 1.1 represents the definition of SMEs for different countries.

Table 1.1 Definition of SMEs in different countries by number of employees

	Medium	**Small**	**Micro**
	Up to	Up to	Up to
USA	500	100	N/A
China	2000	300	N/A
EU	250	50	10
UK	249	49	9
Australia	200	20	5
Turkey	250	50	10

The contribution of SMEs to world economies has been documented in the literature as sustainable economic growth, creating more and better jobs, and developing greater social cohesion (Kumar, 2010). Whilst over 99% of all enterprises in Europe are SMEs, 90% of SMEs are actually micro-enterprises with fewer than 10 employees. However, these micro-enterprises account for 53% of all jobs in Europe and their importance to the European economy is enormous. Table 1.2 and 1.3 illustrate the number of businesses and their impact on economies in certain OECD countries.

Table 1.2 Contribution of SMEs to economies

Country	Sector	% share of all Enterprises	% share of total Employment	% share of total GDP
Turkey (2012)	All sectors	99.8%	75.8%	54.2%
USA (2012)	All sectors	99.7%	48.4%	46%
Japan (2013)	Manufacturing	99.7%	70%	50%
South Korea (2013)	Manufacturing	99.8%	80%	N/A
UK (2013)	Manufacturing	98.9%	58%	N/A
Germany (2013)	Manufacturing	97.7%	45.6%	N/A

Sources: *USA: Small Business Administration, /www.sba.gov/advo/*
Japan. South Korea, UK, Germany: OECD, www.stats.oecd.org
Turkey: Turkish Statistics Department. www.tuik.gov.tr

Micro enterprises face particular problems such as finding finance to grow or establish new business, lack of resources, administrative tasks (red tape), and finding skilled employees as skilled employees are not willing to work for small firms (European Commission, 2014). Micro enterprises are seen as an important segment of the European economy by the European Commission. The European Commission develops programmes to increase the competitiveness of micro enterprises. Developing organisational capabilities enables firms to compete and/or change market places. Developing the organisational capabilities of micro enterprises will not only increase their competitiveness, it will also contribute to economies. Thus, this research is timely and important to conduct.

Table 1.3 Number of businesses (NoB) in different countries

Number of Employees	**Greece (2007)**		**United Kingdom (2007)**		**Germany (2007)**		**Italy (2007)**	
	NoB	Rate	NoB	Rate	NoB	Rate	NoB	Rate
1-9	91979	96.51%	112408	75.37%	122357	60.46%	422373	82.67%
10-19	1182	1.24%	15786	10.58%	43073	21.28%	52347	10.25%
20-49	1224	1.28%	11401	7.64%	15690	7.75%	24745	4.84%
50-249	779	0.82%	7794	5.23%	17021	8.41%	10062	1.97%
250+	145	0.15%	1758	1.18%	4236	2.09%	1408	0.28%
Number of Employees	**Poland (2007)**		**United States (2005)**		**France (2007)**		**Turkey (2002)**	
	NoB	Rate	NoB	Rate	NoB	Rate	NoB	Rate
1-9	174811	88.32%	278490	62.87%	219556	84.14%	221539	89.73%
10-19	6669	3.37%	62394	14.09%	18683	7.16%	N/A	N/A
20-49	7770	3.93%	70211	15.85%	13336	5.11%	20325*	8.23%
50-249	6974	3.52%	18932	4.27%	7365	2.82%	4118	1.66%
250+	1707	0.86%	12909	2.91%	1986	0.76%	917	0.37%
*NoB 10-19 is included to this number.								

Source; OECD, www.stats.oecd.org

Micro enterprises face particular problems such as finding finance to grow or establish new business, lack of resources, administrative tasks (red tape), and finding skilled employees as skilled employees are not willing to work for small firms (European Commission, 2014). Micro enterprises are seen as an important segment of the European economy by the European Commission. The European Commission develops programmes to increase the competitiveness of micro enterprises. Developing organisational capabilities enables firms to compete and/or change market places. Developing the organisational capabilities of micro enterprises will not only increase their competitiveness, it will also contribute to economies. Thus, this research is timely and important to conduct.

1.3 Organisational Capability Theories

Organisational capability theories assert that organisations gain and sustain their competitiveness by deploying valuable resources and capabilities that are hard to replicate (Nelson and Winter, 1982; Wernerfelt, 1984; Barney, 1991; Peteraf, 1993);

they enable firms to deliver superior customer value consistently (Narver et al., 2004); and are defined as an organisation's capacity to deploy its assets, tangible or intangible, to perform a task or activity to improve performance (Maritan, 2001). Organisational capabilities also reflect the ability of the firm to perform repeatedly, or 'replicate', productive tasks that relate to the firm's capacity to create value through effecting the transformation of inputs into outputs (Nelson and Winter, 1982; Teece and Pisano, 1994).

Organisational capability theories have been developed within the resource-based view of the firm by Nelson and Winter (1982), Wernerfelt (1984), Barney (1991), Peteraf (1993), Amit and Schoemaker (1993) and Teece et al. (1997). Initial research focused on explaining how firms perform differently while having similar resources (Nelson and Winter, 1982; Wernerfelt, 1984). Barney (1991) introduced the VRIN (Valuable, Rare, In-imitable, Non-substitutable) framework to explain how firms differentiate routines to gain competitive advantages. Teece et al., (1997) introduced dynamic capabilities. Different frameworks are introduced to explain dynamic capabilities, organisational learning, organisational capabilities (Teece et al., 1997; Wang and Ahmed, 2007; Verona and Ravasi, 2003; Wang and Ahmed, 2003; Cohen and Levinthal, 1990; Zahra and George, 2002). Different types of typologies are developed (Collis, 1994; Winter, 2003; Zahra et al., 2006; Ambrosini et al., 2009)

In the current management literature, organisational capability theories are tested with empirical studies which focus mainly on large enterprises and some SMEs. However, there is no research to explore organisational capability theories in the context of micro enterprises. The value of micro enterprises for the economy cannot be ignored. Thus, this thesis aims to explore the applicability of organisational capability theories in the context of micro enterprises. The following research question is developed for this reason:

RQ 1; Are organisational capability theories relevant to micro enterprises?

1.4 Motivation of Researcher

The researcher is an Industrial Engineering graduate from Kocaeli University, Turkey. He has worked as a Continuous Improvement Engineer at a large international company for two years. He has an academic position in a newly established university in a rural

area of Turkey with a scholarship for an MSc and PhD abroad. There are many micro enterprises around the university. He has developed an interest in how to make micro enterprises more competitive as when he returns to the region, he will be working with such enterprises. Thus, he has selected his research in this area.

1.5 Structure of Theses

The structure of this thesis is as follows: *Chapter 1* provides the aim of this research, the background of SMEs and micro enterprises, the motivation and background of the researcher, and introduces research question 1.

Chapter 2 includes the literature review of organisational capability theories, development of organisational capabilities, it identifies gap in the literature and a theoretical framework is introduced; research question 2 is also introduced.

Chapter 3 comprises of the literature review and empirical research to identify differences between micro enterprises and SMEs and large enterprises. Thus, a conceptual framework of organisational capabilities is developed for micro enterprises and the final research questions are introduced at the end of this chapter.

Chapter 4 and 5 introduce the methodology of the research. *Chapter 4* includes research philosophies in business management and concludes with philosophical assumptions which are made for this research. *Chapter 5* focuses on action research and the research design is introduced.

Chapter 6 demonstrates the development of a measurement instrument. The development process of a capability maturity model is stated in this chapter.

Chapters 7 and 8 include the data analysis and findings. Within the case analysis four cases are represented. The cross-case analysis and findings are represented in *chapter 8*.

The contribution of this research and key findings are represented in *Chapters 9*.

2 LITERATURE REVIEW

2.1 Literature Review Approach

Four main types of review strategy are outlined in the literature: traditional or narrative, systematic, meta-analysis and meta-synthesis (O`Gorman and MacIntosh, 2015). The main purpose of a traditional or narrative review is to analyse and summarise a body of literature. A systematic literature review is defined as identifying, evaluating and interpreting all available research relevant to a particular research question, topic area, or phenomenon of interest (Tranfield et al., 2003; Kitchenham, 2004). Tranfield et al., (2003) suggest ten steps under three broad stage for conducting a systematic literature review as Figure 2.1 illustrates.

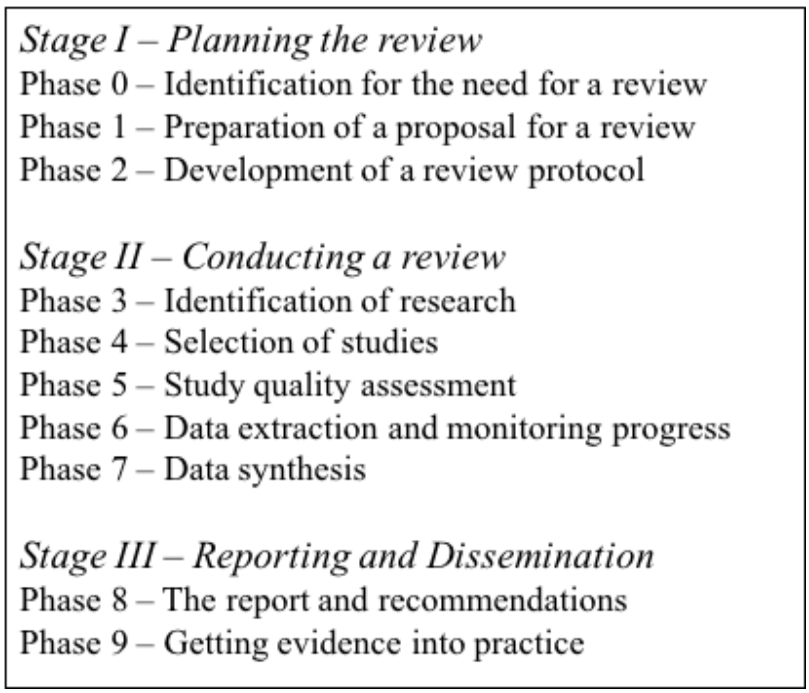

Figure 2.1 Systematic literature review process (Tranfield et al., 2003)

Although, some of the phases of systematic literature review are followed in the literature review process such as selection of studies, development of a review protocol, it cannot be stated that a systematic literature review process is followed in this research. It would be more appropriate, however to say a traditional literature review informed by systematic literature review has been followed as in Bititci et al (2012). The main reason for following a traditional literature review approach is that a systematic literature review processes should begin with a well formulated research

question (Rother, 2007) but the research questions in this research is formulated overtime. In all types of research, literature review has a vital place. Bryman (2012) states that literature review provides the following knowledge:

- What is already known about the topic
- What concepts and theories have been applied to the topic
- What research methods have been applied to the topic
- What controversies exist about the topic and how it is studied
- What clashes of evidence (if any) exist
- Who the key contributors to research on the topic are.

Literature review consists of three processes: search, select and analyse. The Scopus search engine is used in this thesis as it covers almost all databases and enables the researcher to select different criteria. The search process is illustrated in Figure 2.1. Firstly, keywords are searched in all databases via Scopus. As organisational capabilities are briefly introduced in the introduction chapter, keywords are chosen based on the literature. Then, some subject areas - Business Management, Social Science and Economy, Econometrics and Finance - are chosen to narrow the findings. Papers related to organisational capabilities are published in these areas. In addition, only journal articles are included in the results as journal articles are peer reviewed sources. In those results, a second keyword was added to observe all research related to SMEs and micro enterprises. Table 2.1 demonstrates the results by numbers of articles. Furthermore, selecting the correct papers to read is important. Thus, the author read the abstracts of articles to understand their relevance to the research. If the abstract appeared relevant, the full article was read and, if relevant to the research, added to the article list for the analysis stage. Finally, selected articles were represented in the literature review section. At the analysis stage of the literature review, conceptual and theoretical articles were identified to understand the development of the literature. Empirical articles were identified to understand research methodologies in organisational capability theories. As a result of this process, current literature was critically reviewed, the literature gap identified, and a theoretical model of organisational capabilities was developed.

The literature review approach is illustrated in Figure 2.1 and statistics of the results are demonstrated in Table 2.1

Table 2.1 Number of articles

Search Scope		***Keywords***				***Total***
		Organisational Capabilities	*Dynamic Capabilities*	*Adaptive Capabilities*	*Absorptive Capacity*	
Include	Article Title Abstract Keywords	8252	39841	17981	3194	69268
Include	Bus. Man. Soc. Science Economics	5788	2677	917	1339	10721
Include	Journal Articles	3732	1910	566	1023	7231
Include	SMEs	133	57	16	186	392
Include	Micro Enterprises	0	0	0	0	0
Articles has been read		***502***	***327***	***104***	***177***	***1110***

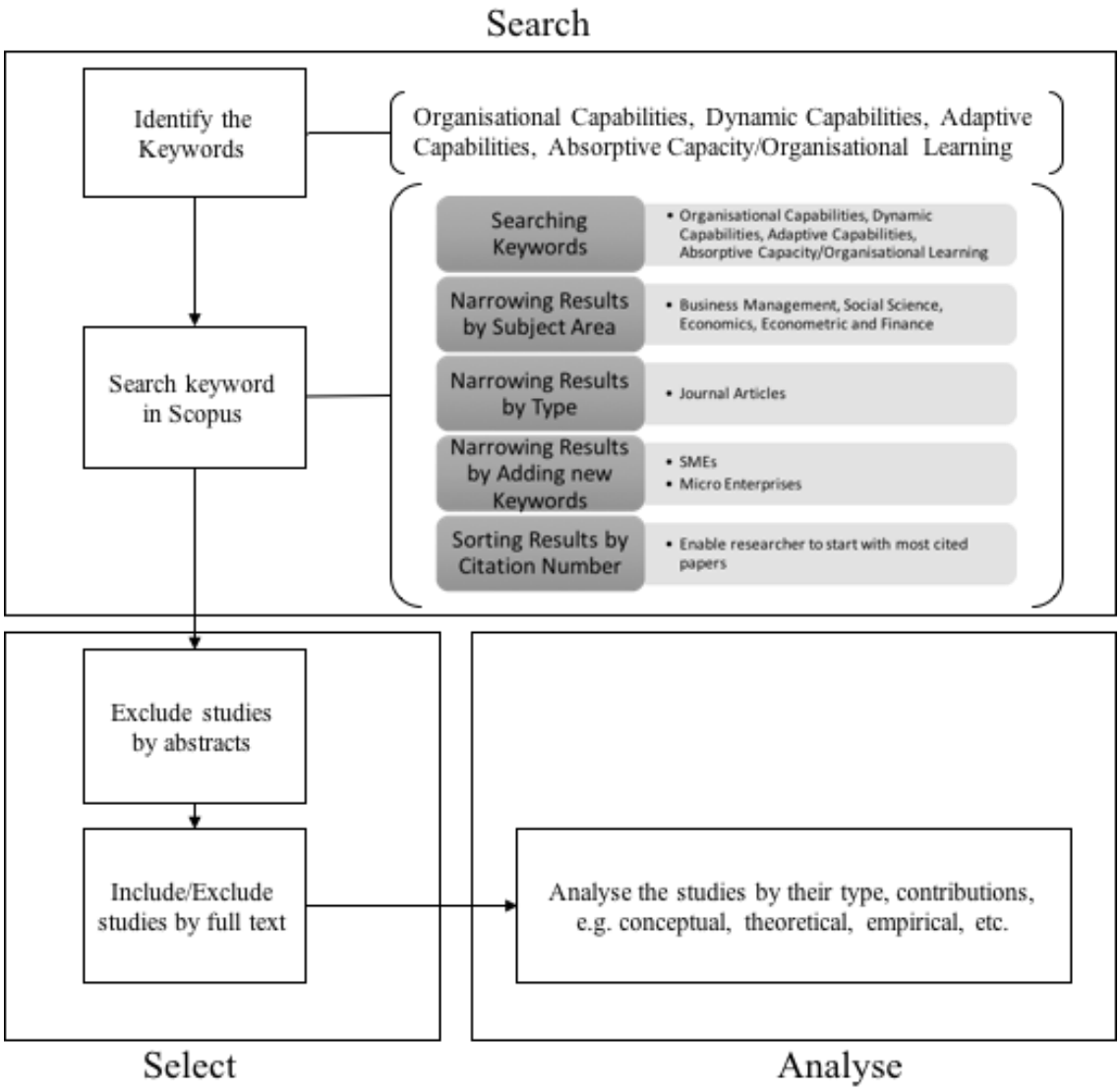

Figure 2.2 Literature review process

2.2 Organisational Capability Theories

Organisational capability theories are developed within a resource-based view (Ambrosini and Bowman, 2009). Researchers have been searching to understand the source of the competitiveness of organisations for decades. Organisational capability theories assert that competitiveness can be gained not only by external resources such as products but, also, internal routines can increase competitiveness (Wernerfelt, 1984; Barney, 1991; Grant, 1996b; Peteraf and Barney, 2003). Development of organisational capability theories is represented in Figure 2.2.

The resource-based view, (RBV) introduced by Penrose (1959), was subsequently developed by Wernerfelt (1984), Barney (1991), and Peteraf (1993) and further

expanded by Helfat and Peteraf (2003), among others. The RBV clarifies how some firms perform better than others (Grant, 1996). It suggests that firms have unique tangible and intangible assets, and idiosyncratic resources or capabilities which enable them to achieve high performance (Barney, 1991; Grant, 1996). A key aspect of the RBV is that firms gain competitive advantage by using their internal resources and capabilities.

The RBV has two main assumptions. First, it assumes that resources and capabilities are heterogeneously distributed across firms and that this heterogeneity persists over time (Ambrosini and Bowman, 2009; Eisenhardt and Martin, 2000; Wang and Ahmed, 2007; Wernerfelt, 1984). According to Barney (1991), resource heterogeneity signifies that resources are distributed unevenly across firms and that different firms possess different bundles of resources. Taking the meaning of this term one step further, Peteraf (1993) suggests that resource heterogeneity also implies some firms have resources that generate more value than others. Secondly, resources and capabilities can become a source of sustainable competitive advantage when they are valuable, rare, inimitable and non-substitutable – i.e., VRIN (Barney, 1991; Peteraf and Barney, 2003).

Barney (1991) argues that valuable, rare, imperfectly imitable, and not substitutable resources and capabilities enable firms to sustain competitive advantages. These resources and capabilities can be viewed as bundles of tangible and intangible assets, including a firm's management skills, its organisational processes and routines, and the information and knowledge it controls.

A valuable resource enables a firm to develop and deliver strategies that "improve its efficiency and effectiveness", or, "exploit opportunities or neutralize threats in [its] environment" (Barney, 1991). The value of a resource is thus in part determined by contextual factors – a resource that proves to be useful in one setting may be of little importance or utility in another setting (Amit & Schoemaker, 1993). Moreover, a rare resource can be only developed by a few competing firms (Barney, 1991). A valuable resource that is simultaneously also rare excludes other firms from implementing the same strategy to attain a competitive advantage (Amit & Schoemaker, 1993). Expressed more formally, a resource is rare in the extent to which its demand exceeds its long-term supply and the extent to which it is heterogeneously distributed among competing firms.

In addition, an inimitable resource cannot be cost-effectively replicated by competitors (Barney, 1991). Barney (1991) suggests that a competitive advantage resulting from a valuable and rare resource can only be sustained over time when competing firms lacking that resource cannot obtain it. Finally, a resource is considered non-substitutable when alternatives (single resources or resource combinations) are non-existent, functionally inferior, or costly to obtain (Barney, 1991). Barney (1991) argues that a firm can gain competitive advantage if their resources are valuable, rare, inimitable, and non-substitutable.

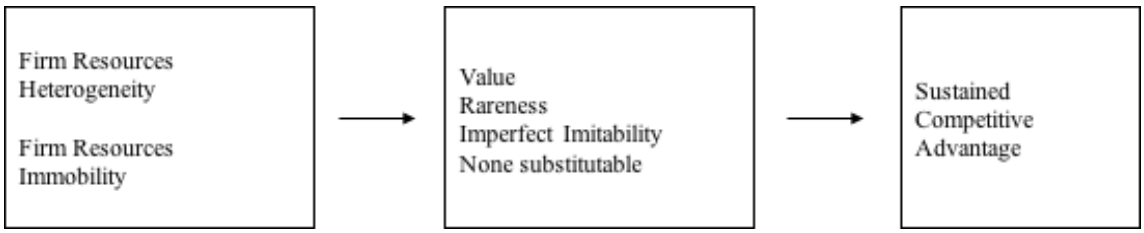

Figure 2.3 Resource-based View model (Barney, 1991)

The RBV is considered as static and deterministic (Priem and Butler, 2001). Sustained competitive advantage based on resources is unlikely in dynamic markets, since the static representation of resources does not consider market dynamism (Eisenhardt and Martin, 2000). A dynamic formula is needed for competitive environments to renew and align resources (Teece, 2007). Consequently, Teece et al. (1997) introduce the dynamic capabilities framework to address the gap. Development of organisational capabilities is represented in Figure 2.2.

Teece et al. (1997) define dynamic capabilities as the enterprise's ability to sense, seize, and adapt in order to generate and exploit internal and external enterprise-specific competences, and to address the enterprise's changing environment. Teece et al., (1997) suggest three capability areas as sensing, seizing and transforming which are mentioned at section 2.2.4. The dynamic capability framework is represented in Figure 2.3.

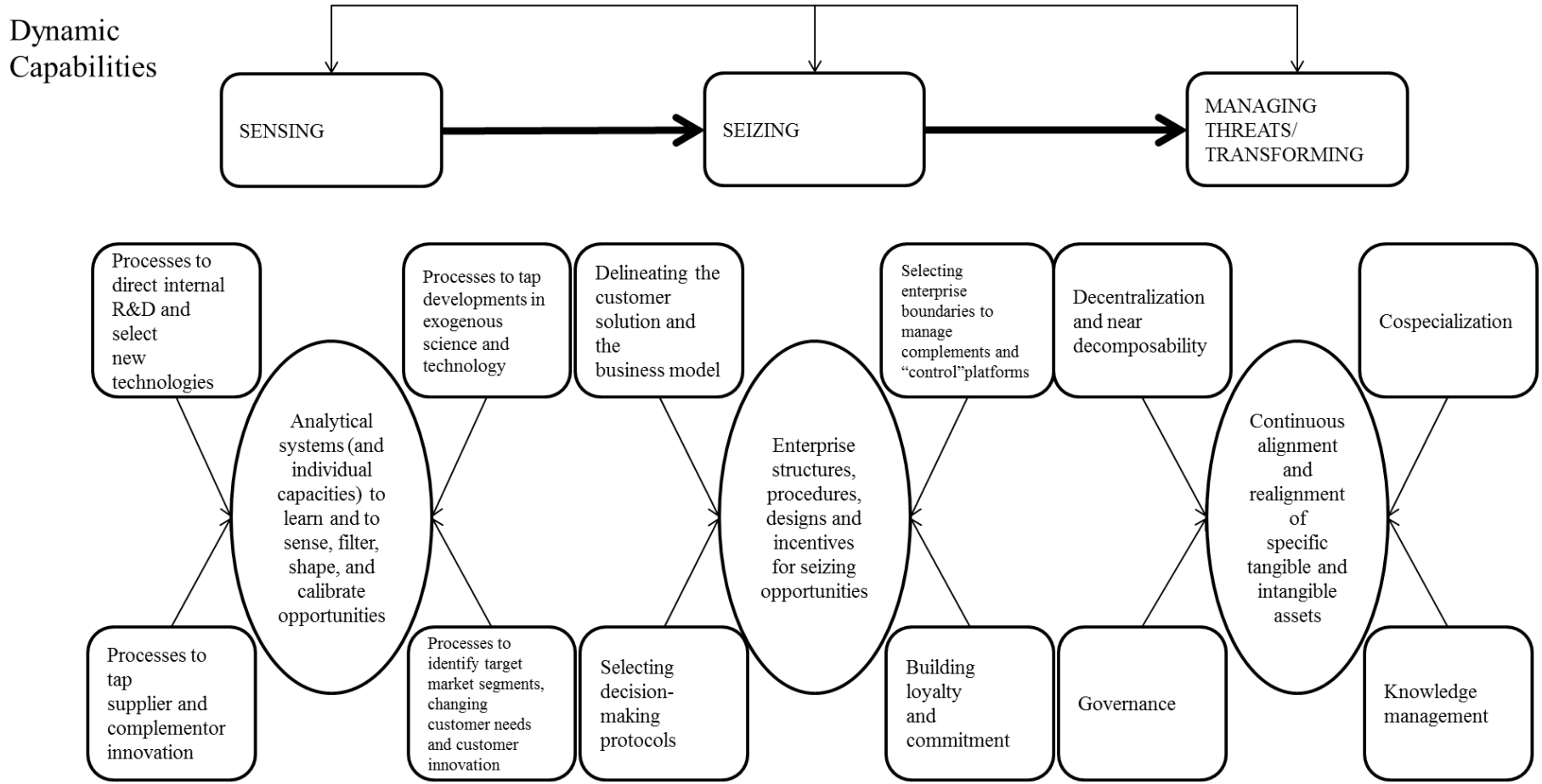

Figure 2.4 Dynamic capability framework (Teece, 2009)

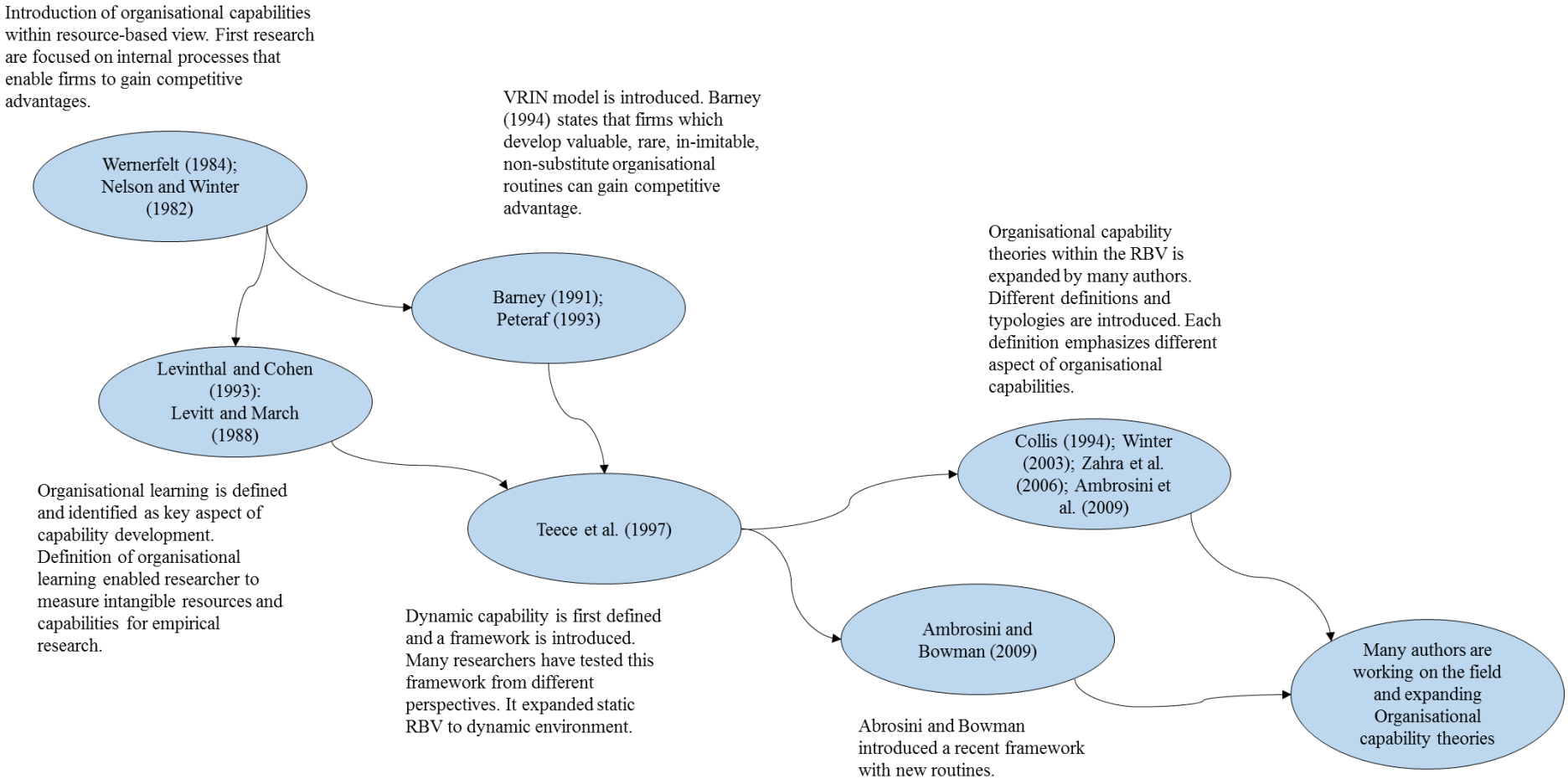

Figure 2.5 Development of organisational capability literature

It is essential to provide definitions of resources and capabilities in order to understand theories and concepts. Resources are defined as "stocks of available factors that are owned or controlled by the firm" (Helfat and Lieberman, 2002). Capability is defined as "a special type of resource, specifically an organisationally embedded non-transferable firm-specific resource whose purpose is to improve the productivity of the other resources possessed by the firm" (Makadok, 2001). Makadok (2001) states that capabilities cannot be transferred or bought, firms must build them. Bititci (2015, p137) states that capabilities have two dimensions: maturity and capacity. Maturity is defined as the ability of doing things and capacity means physical resources such as equipment, time or money. Figure 2.5 illustrates a comparison of two different capabilities. The blue capability has capacity but it is not mature. On the other hand, the red capability represents a mature but low capacity aspect.

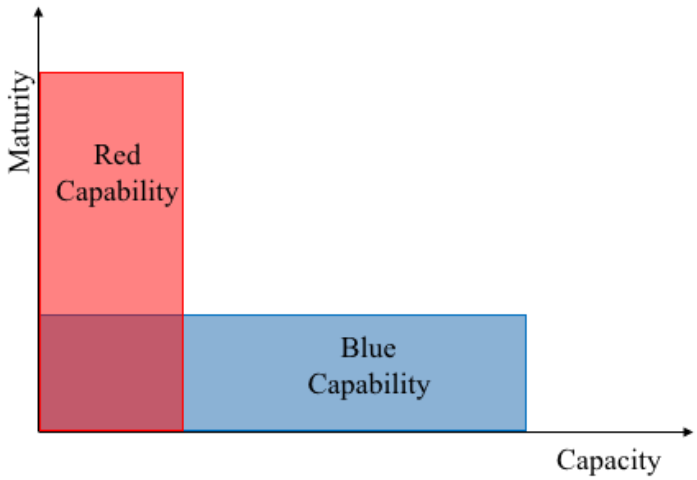

Figure 2.6 Dimensions of capability

2.2.1 Organisational Capabilities: Definitions and Typologies

There are different definitions of organisational capability in the literature. Organisational capabilities are defined as an organisation's capacity to deploy its assets, tangible or intangible, to perform a task or activity to improve performance (Maritan, 2001). Organisational capabilities reflect the ability of the firm to perform repeatedly, or 'replicate', productive tasks that relate to the firm's capacity to create value through effecting the transformation of inputs into outputs (Nelson and Winter, 1982; Teece and Pisano, 1994). Helfat and Peteraf (2003) define organisational capabilities as the ability of an organisation to perform a coordinated set of tasks, utilising organisational resources, for the purpose of achieving a particular end result. Organisational

capabilities are differentiated by different authors such as Collis (1994), Winter (2003), Zahra et al., (2006), and Ambrosini et al., (2009).

Collis (1994) proposes four categories of organisational capabilities. The first are those that reflect an ability to perform the basic functional activities of the firm (Collis, 1994). The second category concerns dynamic improvements to the activities of the firm such as continuous improvement activities. The third category is to recognize the intrinsic value of other resources or to develop novel strategies before competitors (Collis, 1994). The fourth category is labelled 'higher order' or 'meta-capabilities', and it relates to learning-to-learn capabilities.

Winter (2003) proposes that there are zero level capabilities, also called operational or ordinary capabilities, which he defines as those that permit the firm to earn a living in the present. Then he explains that there are first-level capabilities which modify and change zero-level capabilities. He also suggests, similar to Collis (1994), that there are higher order capabilities which operate on the first level capabilities.

Table 2.2 Typologies of organisational capabilities

Collis (1994)	**Winter (2003)**	**Zahra et al. (2006)**	**Ambrosini et al. (2009)**
First category capabilities	Zero-level capabilities	Substantive capabilities	Resource base
Second and third category capabilities	First-order capabilities	Dynamic capabilities	Incremental Dynamic capabilities Renewing Dynamic capabilities
Meta capabilities	Higher order capabilities		Regenerative Dynamic capabilities

In the literature, even though there are different categorisations of organisational capabilities, it seems all authors give different names to similar areas. In this research, organisational capabilities are divided into two capability areas: operational and dynamic capabilities. Operational capabilities enable firms to perform day-to-day activities such as continuous improvement activities. Dynamic capabilities enable firms to adopt and change the marketplace such as research and development activities.

2.2.2 Operational Capabilities

Winter (2003) defines an operational capability as 'a high-level routine (or collection of routines) that, together with its implementing input flows, confers upon an organization's management a set of decision options for producing significant outputs of a particular type'. Operating capabilities enable the firm to execute its main operating activities (Newey and Zahra, 2009). An operational capability enables a firm to perform an activity on an on-going basis using more or less the same techniques on the same scale to support existing products and services for the same customer population (Helfat and Winter, 2011).

Operational capabilities are important to sustain and improve business performance. In management literature, some organisational routines can be identified to improve the operational capability of firms. These organisational routines are outlined below. Concepts like operational excellence, lean manufacturing, total quality management (TQM), etc., may all be classified as operational capabilities.

In the organisational capability literature, which this research focuses on, the term lean thinking/management is used interchangeably with operational excellence and covers all continuous improvement routines such as Lean Management, Six Sigma, Continuous improvement and so on. There is however a separate body of literature that focuses on Lean management where it is defined as a multi-dimensional, integrated system that includes a wide range of manufacturing strategies such as just-in-time production, quality systems, work teams, cellular manufacturing and supplier management (Shah and Ward, 2003; Jasti and Kodali, 2016). Womack and Jones (2003) states that lean activities reduce waste and create value and wealth in the company. Lean manufacturing strategies aim to reduce the waste in human effort, inventory, time to increase responsiveness in the most efficient and economical manner (Todd, 2000). Hines et al., (2004) explain lean in two different level as figure 2.6 represent; a strategic level which drives the thinking and mindsets and an operational level that focuses on achieving improvements on the shop floor.

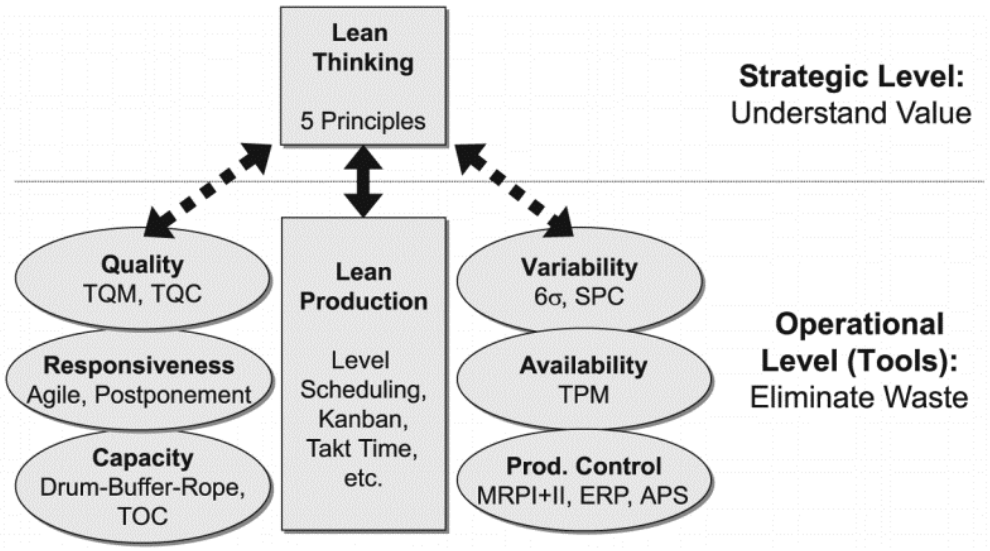

Figure 2.7 Lean thinking framework (Hines et al., 2004)

McAdam et al. (2000) derive a definition of continuous improvement from literature as an evolutionary incremental process which leads to a better way to compete and that adds value to existing processes and encompasses the entire workforce of the organisation. Bessant and Francis (1999) suggest that development of continuous improvement requires acquiring and embedding key behaviours and a learning process. The most comprehensive development process of continuous improvement is defined by Bessant and Francis (1999). The development mechanism of continuous improvement capability includes:

- Training in basic problem finding and solving process
- Training in basic CI tools and techniques
- Setting up relevant vehicles (e.g., quality circles) to enact CI
- Development of an idea management system to receive and respond to ideas
- Development of an appropriate reward and recognition system

Linderman et al (2003) define six sigma as an organized and systematic method for strategic process improvement and new product and service development that relies on statistical methods and the scientific method to make dramatic reduction in customer defined defect rate. Antony and Banuelas (2002) identify key ingredients for successful implementation of six sigma as;

- Management involvement and commitment,
- Organisational culture that motivates employees for change.

- Cultural change; employees must be motivated,
- An effective organisational infrastructure in place to support the Six sigma development program.
- Designing training programs
- Project management skills of team members,
- Project prioritisation and selection, reviews and tracking
- Understanding the six sigma methodology, tools and techniques
- Linking six sigma to business strategy, the customer, human resources, and suppliers

Total quality management is an integrated management philosophy and set of practices that emphasises other aspects such as continuous improvement, meeting customers` requirements, reducing rework, long-range thinking, increased employee involvement and teamwork, process redesign, competitive benchmarking, team-based problem-solving, constant measurement of results, and closer relationships with suppliers (Ross, 1993). Powel (1995) identifies twelve factors for successful development of TQM as follows:

- *Committed leadership*: a near-evangelical, unwavering, long-term commitment by top managers to the philosophy, usually under a name like TQM, continuous improvement (CI), or quality improvement (QI).
- *Adoption and communication of TQM*: using tools like the mission statement, and themes or slogans.
- *Closer customer relationships*: determining customers` (both inside and outside the firm) requirements, then meeting those requirements no matter what it takes.
- *Closer supplier relationships*: working closely and cooperatively with suppliers (often sole-sourcing key components), ensuring they provide inputs that conform to customers` end-use requirements.
- *Benchmarking*; researching and observing best competitive practices.
- *Increased training*: usually includes TQM principles, team skills, and problem-solving.
- *Open organisation*: lean staff, empowered work teams, open horizontal communications, and a relaxation of traditional hierarchy.
- *Employee empowerment*: increased employee involvement in design and planning, and greater autonomy in decision-making.

- *Zero-defects mentality*: a system in place to spot defects as they occur, rather than through inspection and rework.
- *Flexible manufacturing*: (applicable only to manufacturers) can include just-in-time inventory, cellular manufacturing, design for manufacturability, statistical process control, and design of experiments.
- *Process improvement*: reduced waste and cycle times in all areas through cross-departmental process analysis.
- *Measurement*: goal-orientation and zeal for data, with constant performance measurement, often using statistical methods.

Total productive maintenance (TPM) is an innovative approach to maintenance that optimises equipment effectiveness, eliminates breakdowns and promotes autonomous maintenance by operators through day-to-day activities involving total workforce (Bhadury, 2000). TPM harnesses the participation of all the employees to improve production equipment availability, performance, quality, reliability, and safety. TPM endeavours to tap the "hidden capacity" of unreliable and ineffective equipment. TPM capitalises on proactive and progressive maintenance methodologies and calls upon the knowledge and cooperation of operators, equipment vendors, engineering, and support personnel to optimise machine performance, thereby resulting in the elimination of breakdowns, reduction of unscheduled and scheduled downtime, improved utilisation, higher throughput, and better product quality. The principal features of TPM include the pursuit of economic efficiency or profitability, maintenance prevention, improving maintainability, the use of preventive maintenance, and total participation of all employees (Ahuja and Khamba, 2008). Implementation and development of TPM is clearly outlined in the literature (Nakajima, 1988; Hartman, 1992; Shirose, 1996).

Two routines of operational capabilities are identified as continuous improvement activities and strategy development activities. These routines are discussed in the Determinants of Organisational Capabilities section.

2.2.3 Dynamic Capabilities

There are various definitions of dynamic capabilities in the literature. The term was first introduced by Teece et al. (1997) as the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing

environments. After Teece et al.'s definition, many authors have introduced their own definition from different perspectives. Eisenhardt and Martin (2000) define dynamic capabilities as the firm's processes that use resources – specifically the processes to integrate, reconfigure, gain and release resources – to match or even create market change. Dynamic capabilities, thus, are the organisational and strategic routines by which firms achieve new resources configurations as markets emerge, collide, split, evolve and die (Pisano, 2016; Teece, 2016). Zahra and George (2002) emphasise the relationship between change and dynamic capabilities by defining dynamic capabilities as essentially change-oriented capabilities that help firms redeploy and reconfigure their resource-base to meet evolving customer demands and competitor strategies. Zollo and Winter (2002) highlight the importance of learning routine in the development of dynamic capabilities by defining a dynamic capability as a learned and stable pattern of collective activity through which the organisation systematically generates and modifies its operating routines in pursuit of improved effectiveness. Furthermore, Winter (2003) suggests that dynamic capabilities operate to extend, modify or create ordinary (substantive) capabilities.

There are different conceptualisations of dynamic capabilities in the literature. In an early conceptualisation Eisenhardt and Martin (2000) suggest that dynamic capabilities acquire and shed, integrate, and recombine resources to achieve new resource configurations and match or create market change. Verona and Ravasi (2003) and Zott (2003) suggest similar categories, the former focusing on knowledge management, while the latter proposes a variation-selection-retention model. On a more general level, Wang and Ahmed (2007) define three components of dynamic capabilities, including adaptive, absorptive and innovative capability. Finally, Teece (2007) recently conceptualised three classes of dynamic capabilities on the most comprehensive level. Firms exhibiting strong dynamic capabilities effectively sense and shape opportunities, address these opportunities by seizing them, and continuously reconfigure themselves as markets and technologies change (Teece, 2007).

Table 2.3 Disaggregation of dynamic capabilities

Eisenhardt and Martin (2000)	Acquiring and shedding resources	Integrating resources	Reconfiguring resources
Verona and Ravasi (2003)	Knowledge creation and absorption	Knowledge integration	Knowledge reconfiguration
Zott (2003)	Variation and selection	Retention	Reconfiguring and competing with rivals
Wang and Ahmed (2007)	Adapting	Absorbing	Innovating
Teece (2007)	Sensing and shaping opportunities	Seizing opportunities	Reconfiguring

Different organisational capabilities are identified as dynamic capabilities in the literature. A body of literature can be found for each of these capabilities. Hence, definition of each capability and who identified them as a dynamic capability are outlined as follows: *Marketing capability* is identified as a dynamic capability by Easterby-Smith et al., (2009) and Bruni and Verona (2009). Marketing capabilities reflect human capital, social capital and the cognition of managers involved in the creation, use and integration of market knowledge and marketing resources in order to match and create market and technological change (Morgan et al., 2009). *Knowledge development/ learning capability* (Eisenhardt and Martin, 2000: Teece et al., 1997). Learning is a process by which repetition and experimentation enable tasks to be performed better and quicker (Teece et al., 1997). *Imitation/replication capability* (Zott, 2003) is a firm's imitation capability which is the firm's ability to use their knowledge about competitors in order to react quickly, copying the advantages in processes or products of actual competitors, or from firms belonging to related or different industries (Dickson, 1992). *Alliancing and acquisition capability* (Eisenhardt and Martin, 2000: Teece et al., 1997), alliances are formal collaborations which have a wide range of depth, intensity and interdependence. A strategic acquisition is an acquisition by one company of all or part of the assets of another company (SARA, 2013). *Networking capability* (Easterby-Smith et al., 2009) is the capacity of the firm to develop a purposeful set of routines within its networks, resulting in the generation of new resource configurations and the firm’s capacity to integrate, reconfigure, gain and release resource combinations (Mort and Weerawardena, 2006). *Environment-scanning*

capability (Teece et al., 1997) is the monitoring, evaluating, and disseminating of information to key managers within the organisation (Snyder, 1981). *Product development capability* (Eisenhardt and Martin, 2000: Teece et al., 1997) is the complete process of bringing a new product to market (Clark and Fujimoto, 1991). *Innovation capability* (Easterby-Smith et al., 2009; Teece and Leih, 2016) is the ability to continuously transform knowledge and ideas into new products, processes and systems for the benefit of the firm and its stakeholders (Lawson and Samson, 2001). *R&D capability* (Easterby-Smith et al., 2009: Teece et al., 1997) comprises creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications (OECD, 1993).

In the literature, routines – sensing, seizing, leveraging, and transforming/reconfiguring – are suggested to develop dynamic capabilities. These routines are discussed in the following section.

2.2.4 Determinants of Organisational Capabilities

In the literature, there is no consensus on the definition of organisational learning; however, some definitions from literature are described as follows. Organisational learning is the capacity (or processes) within an organisation to maintain or improve performance based on experience (Dibella et al., 1996). Organisational learning is defined as a process encompassing the acquisition, distribution, and interpretation of information, together with the development of organisational memory (Bell et al., 2002; Tippins and Sohi, 2003; Tam and Gray, 2016).

In the organisational learning literature, certain conditions are identified as promoting and guiding learning. Jerez-Gomez et al., (2005) identify four dimensions of organisational learning capability – commitment to learning, systems perspective, openness and experimentation, knowledge transfer – based on previous research (Senge, 1990; Leonard-Barton, 1992; McGill et al., 1992; Ulrich et al., 1993; Yeung et al., 1999; Nevis et al., 1995; DiBella and Nevis, 1998; DiBella, 2001; Goh and Richards, 1997).

In terms of *commitment to learning,* management should recognise the relevance of learning and build a culture that should support acquisition, creation and transfer of knowledge (Jerez-Gomez et al., 2005). Leaders must be motivated to the accomplishment of organisational goals and learning objectives. Moreover, leaders need to create a climate of egalitarianism and trust where people are approachable and failures are a part of the learning process. Considering a *systems perspective,* the organisation is considered as a system that consists of different parts; each part has different functions but they should be able to act together and it is essential that each individual and department should have a clear view of the organisation`s objectives and understand how they can help in their development. A systems perspective helps to group an organisation's members around a common identity (Sinkula, 1994), and to understand how each person can contribute to the organisational objectives. Taking into account *openness and experimentation;* a firm must possess an openness to new ideas and be willing to experiment on a collective level. Nevis et al. (1995) state that experimentation involves trying out new ideas, being curious about how things work, or carrying out changes in work processes. Schein (1993) considers openness as a basic process for building common understanding. A final aspect is *knowledge transfer* where the organisation should have suitable mechanisms for transferring knowledge acquired on an individual basis to teams and, ultimately, to the whole organisation (Jerez-Gomez et al., 2005).

Culture plays an important role in promoting learning in organisations (Ulrich et al., 1993; Jerez-Gomez et al., 2005; L`Hermitte et al, 2016). DiBella et al., (1996) state that the nature of the learning process is related to organisational culture. In their study, DiBella et al., (1996) identify seven different learning orientations where organisations decide their development of learning strategy based on their orientation, as seen in Table 2.4.

Table 2.4 Learning orientations (DiBella et al., 1996)

Name	Approach	
Knowledge source	Internal	External
Product-process focus	Product	Process
Documentation mode	Personal	Collective
Dissemination mode	Formal	Informal
Learning focus	Adaptive	Innovative
Value-chain focus	Design/Make	Market/Deliver
Skill development focus	Individual	Group

In the management literature, research is conducted to understand culture from different perspectives such as business performance, sustainability, learning, innovation, and change. Although research of organisational culture emerged in the 1970s, there is no consensus regarding a common definition. Van Muijen et al., (1992) define organisational culture as a set of core values, behavioural norms, artefacts and behavioural patterns which govern the way people in an organisation interact with each other and invest energy in their jobs and the organisation at large. Organisational culture is also defined as "widely shared and strong held values" (Chatman and Jehn, 1994) and "the way we do things around here" (Lundy and Cowling, 1996). Martins and Terblanche (2003) define organisational culture as the deeply seated (often subconscious) values and beliefs shared by personnel in an organisation.

Schein (2004) states culture consists of three dimensions: assumptions, values and artefacts. Assumptions are widely held, ingrained subconscious views of human nature and social relationships that are taken for granted. Values represent preferences for alternative outcomes as well as means of achieving those outcomes. Artefacts are the more solid or physical representation of culture that include rituals, slogans, traditions and myths. Most researchers focus on values as "values are both more accessible than assumptions and more reliable than artefacts" (Howard, 1998).

Martins and Terblanche (2003) suggest five determinants of organisational culture: strategy, structure, support mechanism, behaviours that encourage innovation, and communication. The first determinant is *strategy.* It is important that employees understand the strategy, mission and vision of the firm in order to act to achieve those

goals. Organisational goals and objectives represent the priorities and values of organisations and can promote or hinder innovation (Arad et al., 1997). Another determinant of organisational culture is *Structure.* Organisational structure also affects innovation within organisations. Values such as flexibility, freedom and cooperative teamwork will promote innovation. On the other hand, values like rigidity, control, predictability and stability will hinder creativity and innovation (Arad et al., 1997). Moreover, *support mechanisms* will enable creativity and innovation. If creative behaviour is rewarded, it will become the dominant way of behaving (Arad et al., 1997). Employees should be supported to take risks and behave creatively to promote innovation and creativity. *Behaviour that encourages innovation* is another key component of organisational culture. In an organisation norms and values can promote or hinder innovation. The process of handling mistakes in an organisation can show whether employees feel free to act creatively and innovatively. Furthermore, management should encourage employees to generate new ideas. The final determinant of organisational culture is *communication.* An organisation with an open communication environment which builds on trust, will affect innovation positively (Barret, 1997). An organisational culture that stimulates innovation and culture is needed to improve five determinants of organisational culture as seen in Table 2.5.

Table 2.5 Five determinants of organisational culture to promote innovation and creativity (Martins and Terblanche, 2003)

Strategy	**Structure**	**Support mechanisms**	**Behaviour that encourages innovation**	**Communication**
• Vision and mission • Purposefulness	• Flexibility • Freedom -Autonomy -Empowerment -Decision-making • Cooperative teams and group interaction	• Reward and recognition • Availability of resources -Time -Information technology -Creative people	• Mistake handling • Idea generation • Continuous learning culture • Risk taking • Competitiveness • Support for change • Conflict handling	• Open communication

Culture is central to the change process and it is often cited as the primary reason for the failure of implementing organisational change programmes. Researchers have suggested that while the tools, techniques and change strategies may be present, failure occurs because the fundamental culture of the organisation remains the same (Bluedorn and Lundgren, 1993; Cameron and Quinn, 2006). Kanter et al., (1992) state managers must understand current organisational culture to be able to be successful in the change process. Thus, it is important to create an improvement and learning oriented culture in order to build other capabilities.

The routines of operational capabilities include continuous improvement, strategy development and implementation (Zahra et al., 2006: Ambrosini and Bowman, 2009). Improvement capability is defined as the ability to incrementally increase manufacturing performance using existing resources (Swink and Hegarty, 1998). Continuous improvement is defined as a company-wide process of focused and continuous incremental innovation (Bessant et al., 2001). There are different methodological problem solving approaches such as PDCA (Plan-Do-Check-Act) as developed by Deming and DMAIC (Define-Measure-Analyse-Improve-Control). The PDCA cycle is more than simply a tool; it is a concept of continuous improvement processes embedded in the organisation's culture (Sokovic et al., 2010). DMAIC is a more data driven approach developed for Six Sigma projects (Sokovic et al., 2010). Continuous improvement activities should align with strategic goals and objectives (Muda and Hendry, 2003).

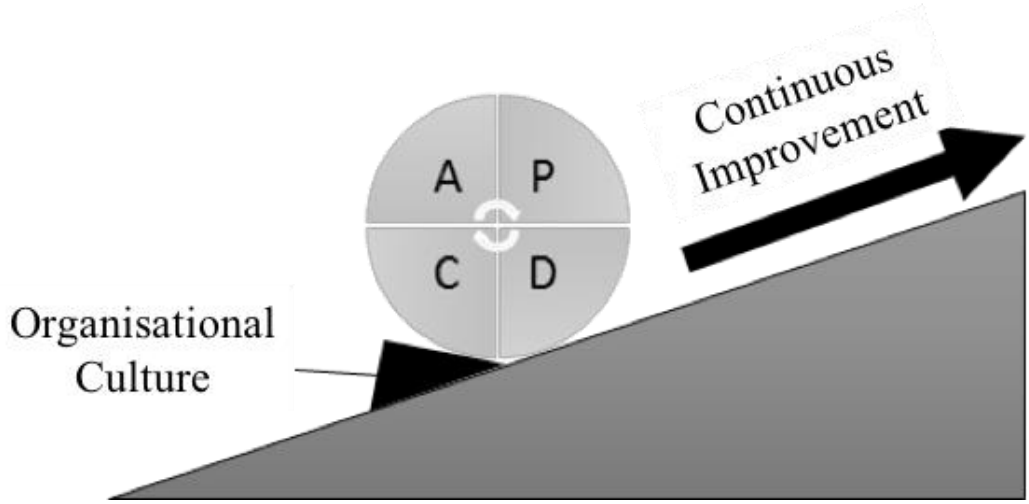

Figure 2.8 PDCA cycle in continuous improvement process (Sokovic et al., 2010)

There are various definitions of strategy in the literature. A typical definition of strategy is “the direction and scope of an organization over the long term. It ideally matches its resources to its changing environment, and in particular its markets, customers or clients so as to meet stakeholder expectations” (Johnson and Scholes, 1993). Strategy plays an important role in the development of core capabilities for long term competitive advantages (Kak and Sushil, 2002). There are different well established strategy development and deployment approaches in the literature. Figure 2.8 represents an example of the strategy development and implementation process (Feurer and Chaharbaghi, 1995). A key feature of the literature on strategy formulation and deployment is that smaller firms or small business units of larger firms should have focused clear and concise strategies and that these strategies should be clearly deployed to the operational activities of the business.

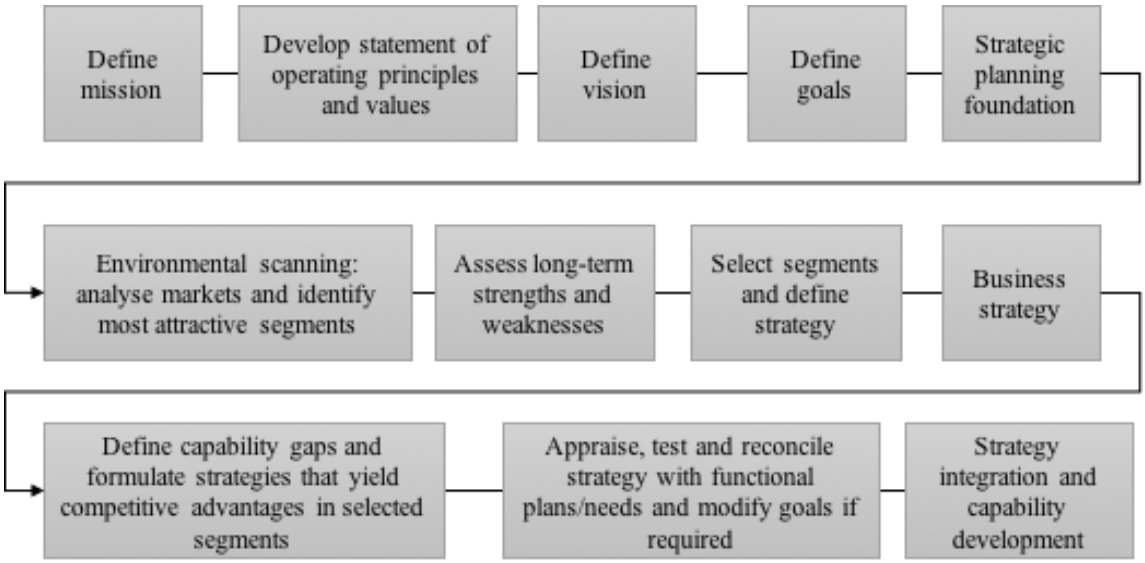

Figure 2.9 Strategy development and implementation (Feurer and Chaharbaghi, 1995)

Concerning operational capabilities, the literature comprises many management tools and practices which are mostly implemented by larger firms but also adopted by SMEs; these include continuous improvement (CI), just-in-time (JIT), lean production, total quality management (TQM), totally productive management (TPM), customer relationships management (CRM). However, these practises are not easily implemented in micro enterprises due to the complexity, cost and need for highly educated people.

In the literature, some activities are identified as routines of dynamic capabilities such as sensing, seizing, transforming/reconfiguration, and leveraging. Sensing new opportunities is very much a scanning, creation, learning, and interpretive activity. Investment in research and related activities is usually a necessary complement to this activity. Opportunities get detected for two different reasons. First, entrepreneurs can have differential access to existing information (Kirzner 1973 cited in Teece, 2009). Second, new information and new knowledge (exogenous or endogenous) can create opportunities, as emphasized by Schumpeter (1934) (cited in Teece, 2009). Sensing refers to the recognition of market and technological opportunities and the mobilization of requisite resources (Katkalo et al., 2010).

Once a new (technological or market) opportunity is sensed, it must be addressed through new products, processes, or services. This almost always requires investments in development and commercialisation activity (Teece, 2009). Seizing refers to the organisational strategy and infrastructure for making appropriate decisions and absorbing and integrating resources to create and capture value from addressing opportunities (Katkalo et al., 2010). The successful identification and calibration of technological and market opportunities, the judicious selection of technologies and product attributes, the design of business models, and the commitment of (financial) resources to investment opportunities can lead to enterprise growth and profitability. Profitable growth will lead to the augmentation of enterprise-level resources and assets (Teece, 2009). Transforming refers to the continuous renewal and modification aimed at maintaining competitiveness, as markets and technologies change once again (Katkalo et al., 2010). Leveraging involves replicating a process or system that is operating in one business unit into another, or extending a resource by deploying it into a new domain, for instance by applying an existing brand to a new set of products (Ambroni and Bowman, 2009).

2.2.5 Foundation Level Capabilities

In this research, a third, different capability area – foundation level – is identified. Foundation level capabilities are similar to but not the same as Collis`s (1994) first category capabilities; the key difference being that foundation level capabilities are not only basic functions, organisational learning and organisational culture are also included. In the literature, organisational learning is seen as one form of dynamic

capability (Wang and Ahmed, 2003) or routine to develop dynamic capabilities (Ambrosini and Bowman, 2009). However, learning is a key routine for capability development for all organisational capabilities. Thus, *it is defined at the foundation level in this re*search. Furthermore, organisational culture is seen as the reason for the success or failure of organisational change (Bluedron and Lundgren, 1993; Parker and Bradley, 2000). Empirical research suggests that organisations which have democratic and participative cultures perform better when adopting change than organisations which have a command and control culture (Ulrich et al., 1993; Jerez-Gomez et al., 2005). Skerlavaj et al. (2007) emphasise that culture is a key determinant of capability development. Organisational culture is substantial for successful capability development and it has an impact on all organisational capabilities. Thus, *it is also defined at the foundation level*.

2.3 Conclusion

In the organisational capabilities literature, there are different methodologies for development of capabilities (Adner and Helfat, 2003; Helfat, 2000; Helfat and Peteraf, 2003; Teece, 2007; Teece et al., 1997; Winter, 2000, 2003; Zollo and Winter, 2002). The most comprehensive approach is that organisational capabilities are divided into the two areas of operational and dynamic capabilities (Cepeda and Vera, 2007; Bustinza et al., 2010; Newey and Zahra, 2009; Helfat and Winter, 2011). However, a third capability area is defined as a foundation level capability in this research. Foundation level capabilities include organisational learning and organisational culture as well as the tangible resources of firms. The theoretical framework is developed based on current knowledge in organisational capabilities, as Figure 2.9 demonstrates.

The theoretical framework is developed based on the current literature. As it is mentioned above, foundation level capabilities are positioned at the bottom of all other capabilities. Foundation level capabilities are essential for development of higher level capabilities such as operational and dynamic. Foundation level capabilities compromise of organisational culture and organisational learning. Organisational culture has a vital role in development of capabilities as a participative culture promotes learning and innovation. Culture can cause failure or success of an organisational change. Furthermore, learning is also essential for capability development. For instance, a firm can access a public fund through a consultant which they can get the fund but this does

not mean they have developed a capability to get funds. Thus, organisational culture and learning is located at the centre of capability development. Organisational – operational and dynamic – capabilities are built on foundation level capabilities. In literature, dynamic capabilities are linked change and operational capabilities are linked to day-to-day activities but there is always a change in processes (Helfat, 2000). Thus, in this research, dynamic capabilities are not demonstrated to control or built on operational capabilities. Dynamic and operational capabilities are represented at same level due to they support each other development. Operational capabilities have two main routines as continuous improvement, and strategy development and implementation. Operational capabilities focus on continuous improvement and strategy development activities to increase operational excellence and develop focused business models. In addition, dynamic capabilities are developed though sensing, seizing, transforming/reconfiguring, and leveraging activities in order to become an adaptive and innovative organisation. Sustainable business performance can be achieved though development of organisational capabilities.

The first objective of this research is to investigate the relevance of micro enterprises and organisational capabilities. In the literature organisational capabilities are seen as a source of the competitive advantage of firms. Micro enterprises also require organisational capabilities to increase their competitiveness. Thus, it can be stated that organisational capabilities are relevant to micro enterprises. However, there is no current research on micro enterprises in the organisational capability literature. Moreover, when Penrose (1959) defined the term "firm" and explained "growth process" in her book she stated that the characteristics of small firms are different from large firms as: *"the differences in the administrative structure of the very small and the very large firms are so great that in many ways it is hard to see that the two species are of the same genus……we cannot define a caterpillar and then use the same definition for a butterfly"*. Thus, the second research question is formulated as follows:

RQ 2: What makes Micro Enterprises different than Small and Medium, and Large enterprises?

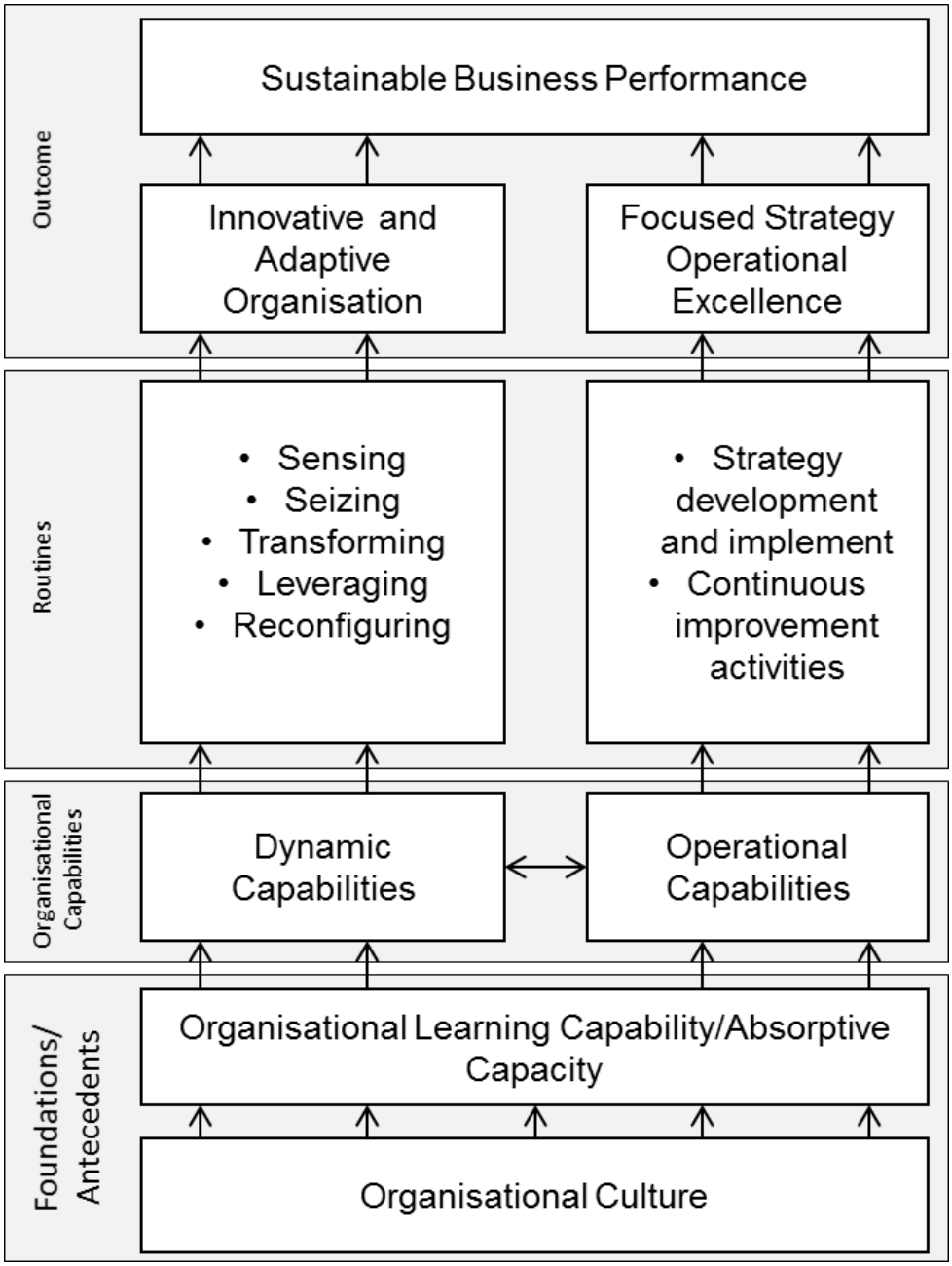

Figure 2.10 Theoretical framework of organisational capabilities

3 WHAT MAKES MICRO ENTERPRISES DIFFERENT?

In this chapter, the differences between micro enterprises, and large enterprises and SMEs are investigated. The differences between SMEs and large enterprises can be identified based on the current literature. However, there is not sufficient knowledge about micro enterprises. Thus, an empirical research is conducted to understand the characteristics of micro enterprise and the differences between micro enterprises and others. First, the differences between SMEs and large enterprises are outlined based on the current literature. Then, empirical research is introduced and the results represented. Finally, a conceptual model is developed to test in micro enterprises.

3.1 Differences between SMEs and large enterprises

In the literature, there is not a single research identifying the differences between SMEs and large enterprises. However, there is much research suggesting SMEs are different than large enterprises (Garengo et al., 2011; Ates et al., 2013; Cagliano and Spina, 2002; Matten and Moon, 2004; Wessel and Burcher, 2004; Lee and Oakes, 1995; Ghobadian and Gallear, 1996; McAdam, 2000; Youssef et al., 2002; Deros et al., 2006). Kumar (2010) identifies ten different key areas – leadership, management, strategic planning, organisational structure, system and procedures, human resources, market and customer focus, operational improvement, innovation and networking – to differentiate SMEs and large enterprises by literature review. In this research, the differences between large enterprises, SMEs, and micro enterprises are discussed under these ten areas.

Leadership skills have a huge influence on the success of an SME but many SME owners/managers lack administrative skills and managerial culture (Wessel and Burcher, 2004; Garengo et al., 2005). SMEs owners/managers are usually busy with daily operational activities and are unable to undertake any other activities (Garengo et al., 2005). Moreover, management in SMEs is mostly by direct supervision or supervised supervision by owners/managers in contrast to large firms which practice delegation or decentralisation of responsibilities (Greiner, 1998; Scott and Bruce, 1987). Conversely, large organisations are usually bureaucratic, based on standardisation and delegation of responsibilities whereas, owners/managers of SMEs have a good understanding of operational issues, processes, customer needs and are more involved

with customers (Cagliano et al., 2001; Youssef et al., 2002; Deros et al., 2006). In large enterprises top management is not involved with daily operational activities due to its hierarchical organisational structure (Beaver and Prince, 2004) whereas within SMEs owners are usually in manager positions. On the other hand, owners rarely make up the management in large enterprises (Kumar, 2010). Furthermore, in SMEs decisions are made based on imprecise information and fluctuation (Kumar, 2010); strategic activities within SMEs are taken in quick response rather than following in-depth analysis which is the case in large organisations (Beaver and Prince, 2004). In comparison to large enterprises SMEs focus on niche strategies to take advantage of being flexible and responsive (Tolentino, 2000). Large organisations undertake in-depth analysis to develop strategic plans for the long term while SMEs have midterm strategic plans. SMEs have a flat organisational structure while large organisations have a horizontal organisational structure (Ghobadian and Gallear, 1997). Delegation of responsibilities within different departments in large organisations causes communication problems, slow decision-making processes, late implementation, and high resistance to change whereas SMEs take advantage of having fewer departments and can overcome these problems more easily. On the other hand, large organisations are in a better position in terms of productivity due to high levels of formalisation, standardisation, and specialisation compared to SMEs (Garengo et al., 2005; Deros et al., 2006). Large enterprises have mature and well established systems and procedures in place while small firms range from non-existent to basic levels of systems and procedures (Scott and Bruce, 1987; Ghobadian and Gallear, 1996; Deros et al., 2006). Processes in SMEs are designed to provide flexibility, encourage innovation and quick response to customer needs (Deros et al., 2006). In this way, SMEs take advantage of flexible and adaptive processes. Compared to large enterprises SMEs take advantage of education and training their employees due to the number of workers. However, they struggle to finance training and education activities (Ghobadian and Gallear, 1996; McAdam, 2000). Research shows that SMEs are more responsive to market needs, more adaptable to change and more innovative in their ability to meet customer needs (Ghobadian and Gallear, 1996; Haksever, 1996; Garengo et al., 2005; Deros et al., 2006). SMEs are closer to their products and customers than large counterparts and this allows them to respond quicker. SMEs usually have local and national customers while large enterprises usually have international customers. Large enterprises use well established management practises such as TQM, Lean, Six Sigma, and Kaizen. (Banuelas and

Antony, 2002: Antony et al., 2005). However, SMEs are slow to adopt such management practices due to lack of understanding, resources and knowledge, and short term strategic planning (Garengo et al., 2005; Kumar, 2007; Antony et al., 2008). In the literature some authors claim that SMEs are more innovative than large organisations (Hallberg, 2003). Conversely, Tidd et al. (2001) suggest that SMEs are not always more innovative. Large organisations take advantage of their resources and good external networking while SMEs are more flexible, use their resources more effectively, and are better motivated (Kumar, 2010). Networking promotes innovation at SMEs (North et al., 2001). Governments and universities provide some support for developing SMEs but very few SMEs are aware of such opportunities. Furthermore, many SMEs cannot develop their networking capabilities due to their lack of resources. In conclusion, the differences between large enterprises and SMEs (excluding micro enterprises) – based on the current literature – are identified, as Table 3.1 represents.

Table 3.1 Differences between large enterprises and SMEs *(Adopted from Kumar, 2010)*

	Large	Small and Medium	References
Leadership	• Professionals, administrative • Leaders involved in strategic activities	• Entrepreneurial, individualistic • Leaders more involved in operational activities than strategic activities	Ghobadian and Gallear, 1996; Garengo et al., 2005; Carter et al., 2000; Wessel and Burcher, 2004
Management	• Participative; decentralisation of authority • Top management remote from point of delivery • Formalisation of behaviour and delegation of responsibilities to achieve co-ordination • Mostly bureaucratic • Strong departmental / functional mind-set	• Direct supervision or supervised supervision • Top management close to the point of delivery • Owners have better understanding of processes, operational issues, and customer needs • Mostly organic • Corporate mind-set	Ghobadian and Gallear, 1996; Cagliano et al., 2001; Youssef et al., 2002; Deros et al., 2006;
Strategic Planning	• Both short and long-term planning • Planning based on in-depth analysis • Strategic process fixed and regulated	• Short-term planning with focus on niche strategies • Strategic activities informal, intuitive, invisible • Strategic process emergent and instinctive • Decision based on imprecise information and subject to fluctuation	Baker et al., 1993; Berry, 1998; Barnes, 2002; Sum et al., 2004; Beaver and Prince, 2004; Storey, 1994
Organisational Structure	• Hierarchical with several layers of management • High degree of specialisation • Rigid structure and information flow • Top management visibility limited • Multi-sited or multi-national • Many interest groups • Cultural diversity	• Flat with few layers of management • Low degree of specialisation • Flexible structure and information flow • Top management highly visible • Single sited • Very few interest groups • Unified culture	Shea and Gobeli, 1995; Ghobadian and Gallear, 1996; Yusof and Aspinwall, 2000; Youssef et al., 2002; Garengo et al., 2005; Deros et al., 2006; Tidd et al.,2001

System and Procedures	• Formal control systems • High degree of standardisation • System dominated • Rigid and inadaptable processes • Decisions based on fact more prevalent • Fragmented decision-makers	• Simple bookkeeping, personal control • Some degree of standardisation and formalisation • People dominated • Flexible and adaptable processes • Decisions based on gut feeling more prevalent • Few decision-makers	Ghobadian and Gallear, 1996; Yusof and Aspinwall, 2000; Deros et al., 2006
Human Resources	• Dominated by professionals • Personal authority mainly low • Individual creativity stifled • Ample human capital, financial resources and know-how • Training and staff development more likely to be planned and large scale • High incidence of unionisation • High degree of resistance to change • More specialist staff • Potentially many internal change catalysts	• Dominated by entrepreneurs • Personal authority mainly high • Individual creativity encouraged • Limited human capital, financial resources and know-how • Training and staff development more likely to be ad-hoc and small scale • Low incidence of unionisation • Negligible resistance to change • More generalists, some staff may cover more than one department • Very few internal change catalysts	Wessel and Burcher, 2004; Lee and Oakes, 1995; Ghobadian and Gallear, 1996; McAdam, 2000; Youssef et al., 2002; Deros et al., 2006
Market and Customer focus	• Wide span of activities • Extensive external contacts • Larger customer base	• Narrow span of activities • Limited external contacts • Limited customer base	Ghobadian and Gallear, 1996; Haksever, 1996; Yusof and Aspinwall, 2000; Youssef et al., 2002; Garengo et al., 2005; Deros et al., 2006; Beaver and Prince, 2004

Operational Improvement	• Vast knowledge or understanding of operational improvement activities • High incidence of implementation of CI initiatives • Better understanding of performance measurement system • Better understanding and experience of managing complex projects • Process improvement projects initiated based on facts and data	• Limited knowledge or understanding of operational improvement activities • Slower to adopt such formalised management practices • Poor understanding of performance measurement system • Poor project management understanding • Process improvement based on gut feeling	Garengo et al., 2005; Kumar, 2010; Phelps et al.,2007; Antony et al., 2008; Banuelas and Antony, 2002; Neely, 2000
Innovation	• Low incidence of innovation • Ability to spread risk over portfolio of projects • Ability to gain scale economies in R&D, production and marketing • R&D activities more intensive • Product innovation stimulated by both technology-push and demand-pull	• High incidence of innovation • Innovation can represent a disproportionately large financial risk • Inability to spread risk over a portfolio of projects • In some areas scale economies from substantial entry barriers • Increasing global competition and demand from customers to reduce cost promotes innovation • R&D activities more efficient • Product innovation stimulated by technology-push	Hallberg, 2003; Tidd et al, 2001; Karlsson and Olsson, 1998; McAdam et al., 2000; Oakey and Cooper, 1991; Mitra, 2000, North et *al*., 2001; Laforet and Tann, 2006
Networking	• Extensive external networking • Better understanding of support available from local government • In-house capability to perform R&D activities	• Limited external networking • Limited knowledge of funding and support available from local government bodies or academic institutions • Better able to innovate when part of clusters	Ostgaard and Birley, 1994; Barbosa and Fuller, 2007; Chen and Huang, 2004; Mitra, 2000, North et al., 2001; Thomas, 2007

3.2 Differences between Micro Enterprises and Large Enterprises and SMEs

The literature provides sufficient knowledge to differentiate between large enterprises and SMEs. However, there is not enough research on micro enterprises to identify the differences between micro enterprises and others (large enterprises and SMEs). Thus, an empirical study is conducted to understand the differences between micro enterprises and others. In this empirical research, 16 micro enterprises were selected from different sectors and regions of Turkey. An explanation of the case selection can be found in the methodology chapter. Owners/managers were involved in interviews and a Semi-structured questionnaire was used. The following questions were asked:

- What kind of issues do you face in general? (General)
- How can you describe your firm`s performance in today`s market place in terms of cost, productivity, training, flexibility, quality, potential issues etc.? (Operational)
- How do you manage your resources such as equipment, workforce, and materials? (Operational, Managerial)
- What is your future plan about your business? How do you think to improve your business performance? (Strategic)
- What kind of activities do you do to understand the market trends? (Adaptive)
- What makes your business different from other competitors? (Adaptive)
- Have you tried new innovative ways in your business? What did you learn from these attempts? (Adaptive)

As a result of the empirical study, the differences between micro enterprises and others are identified, as Table 3.2 illustrates. The characteristics of micro enterprises are derived from the data. Owners/managers of micro enterprises usually work as an employee in many micro enterprises. Thus, their first priority as a leader is day-to-day operational activities such as delivering products or services, repairing broken machines and making daily payments. Micro enterprises do not have long term strategies and mostly deal with fire-fighting (to survive the day). Owners/managers undertake all administrative activities in micro companies and all employees are directly supervised by the owner/manager. A command and control culture is dominant in micro enterprises. Micro enterprises have no or basic procedures such as some safety procedures. Micro enterprises tend not to develop any standard procedures in order to be more agile as their existence is based on local customised demands. In addition,

micro enterprises face a common issue of training and educating employees to a certain level and then losing them due to salary increase requests. Micro enterprises have limited access to enter international or national marketplaces due to financial constraints. The relationship with customers is built on trust and all micro producers want to keep their reputation 'trustworthy'. Micro companies mostly use their relatives and friends to develop their networks and this limits their access to new knowledge, markets, and innovation opportunities within a very limited area. Micro companies, have a *"do not fix it until it's broken"* approach for improvement activities. Employees are not encouraged to contribute to the development of processes. Many micro companies start with innovative ideas but innovation capability is limited by the owner/manager; thus they develop resilience to change. In conclusion, the characteristics of micro enterprises are derived from the empirical data and Table 3.2 represents the differences between large, SMEs and micro enterprises.

Table 3.2 Differences between micro enterprises and others

	Large	**Small and Medium**	**Micro**
	From Literature (Table 3.1)	*From Literature (Table 3.1)*	*From Empirical Data*
Leadership	• Professionals, administrative • Leaders involved in strategic activities	• Entrepreneurial, individualistic • Leaders more involved in operational activities than strategic activities	• Entrepreneurial, individualistic • Leaders involved with operational activities
Management	• Participative; decentralisation of authority • Top management remote from point of delivery • Formalisation of behaviour and delegation of responsibilities to achieve co-ordination • Mostly bureaucratic • Strong departmental / functional mind-set	• Direct supervision or supervised supervision • Top management close to point of delivery • Owners have better understanding of processes, operational issues, and customer needs • Mostly organic • Corporate mind-set	• Command and control • Owners know everything within the organisation • No delegation or decentralisation
Strategic Planning	• Both short and long-term planning • Planning based on in-depth analysis • Strategic process fixed and regulated	• Short-term planning with focus on niche strategies • Strategic activities informal, intuitive, invisible • Strategic process emergent and instinctive • Decision based on imprecise information and subject to fluctuation	• No strategic planning • Decisions based on daily operational activities to survive
Organisational Structure	• Hierarchical with several layers of management • High degree of specialisation • Rigid structure and information flow • Top management visibility limited • Multi-sited or multi-national • Many interest groups • Cultural diversity	• Flat with few layers of management • Low degree of specialisation • Flexible structure and information flow • Top management highly visible • Single sited • Very few interest groups • Unified culture	• Flat with one layer • No specialisation • Very flexible workforce • Owners can be seen part of operational processes

System and Procedures	• Formal control systems • High degree of standardisation • System dominated • Rigid and inadaptable processes • Decisions based on fact more prevalent • Fragmented decision-makers	• Simple bookkeeping, personal control • Some degree of standardisation and formalisation • People dominated • Flexible and adaptable processes • Decisions based on gut feeling more prevalent • Few decision-makers	• No procedures • Low degree of standardisation or formalisation • Very flexible and adaptable processes • Only one (owner) decision-maker • Decisions based on owner's thoughts
Human Resources	• Dominated by professionals • Personal authority mainly low • Individual creativity stifled • Ample human capital, financial resources and know-how • Training and staff development more likely to be planned and large scale • High incidence of unionisation • High degree of resistance to change • More specialist staff • Potentially many internal change catalysts	• Dominated by entrepreneurs • Personal authority mainly high • Individual creativity encouraged • Limited human capital, financial resources and know-how • Training and staff development more likely to be ad-hoc and small scale • Low incidence of unionisation • Negligible resistance to change • More generalists, some staff may cover more than one department • Very few internal change catalysts	• Very high personal authority of owner • Individual creativity not encouraged • Almost no financial resource for training and staff development • No unionisation • Employees may work in different work stations
Market and Customer	• Wide span or activities • Extensive external contacts • Larger customer base	• Narrow span or activities • Limited external contacts • Limited customer base	• Very narrow activities • Very limited external contacts • Very limited customer base

Operational Improvement	• Vast knowledge or understanding of operational improvement activities • High incidence of implementation of CI initiatives • Better understanding of performance measurement system • Better understanding and experience of managing complex projects • Process improvement projects initiated based on facts and data	• Limited knowledge or understanding of operational improvement activities • Slower to adopt formalized management practices • Poor understanding of performance measurement system • Poor project management understanding • Process improvement based on gut feeling	• Very limited understanding of operational improvement • Do not accept to adopt any formalised management practises • Very limited understanding of performance measurement
Innovation	• Low incidence of innovation • Ability to spread risk over portfolio of projects • Ability to gain scale economies in R&D, production and marketing • R&D activities more intensive • Product innovation stimulated by both technology-push and demand-pull	• High incidence of innovation • Innovation can represent a disproportionately large financial risk • Inability to spread risk over a portfolio of projects • In some areas scale economies from substantial entry barriers • Increasing global competition and demand from customers to reduce cost promotes innovation • R&D activities more efficient • Product innovation stimulated by technology-push	• Innovation based on customer needs • Almost no R&D activities • Fulfil customised local customer needs
Networking	• Extensive external networking • Better understanding of support available from local government • In-house capability to perform R&D activities	• Limited external networking • Limited knowledge of funding and support available from local government bodies or academic institution • Better able to innovate when they were part of clusters	• Very limited external networking activities • No or slight knowledge of funding and support available from government

3.3 Conclusion

In the literature, studies that differentiate large enterprises and SMEs do exist. However, there is a lack of understanding concerning the characteristics of micro enterprises. Thus, an empirical study is conducted to understand differences between micro enterprises, SMEs and large enterprises. As a result, Table 3.2 is based on a combination of the literature review and empirical study to differentiate micro enterprises. It can be suggested that *micro enterprises are different than SMEs and large enterprises.*

In chapter 2, a generic theoretical framework was developed and different organisational capabilities were identified. The gap in the literature is that no research has been conducted to understand organisational capabilities in the context of micro enterprises. The first research question was set to identify whether organisational capabilities are relevant to micro enterprises. It can be stated that organisational capabilities are relevant to micro enterprises but not all organisational routines can be developed in micro enterprises as micro enterprises have different characteristics to SMEs and large enterprises. Thus, a conceptual model to understand organisational capabilities in micro enterprises has been developed, as illustrated in Figure 3.1.

In the literature, different types of organisational capabilities – dynamic and operational – are identified. Micro enterprises have different business environments than SMEs and large enterprises. Theories, frameworks and concepts in the current literature cannot be directly implemented in micro enterprises. In the conceptual model, theories, which are developed for large enterprises and/or SMEs, are conceptualised for micro manufacturing enterprises by taking consideration of the lack of tangible and intangible resources of micro enterprises. Also in the literature, TQM, TPM, Lean production, six sigma, etc., are seen as the source of operational excellence (Wernerfelt, 1984; Barney, 1991; Peteraf, 1993; Powel, 1995). However, these practices require educated employees and incur high cost which micro manufacturing enterprises find difficult to implement. In the conceptual framework, continuous improvement activities are suggested such as 5S, Kaizen, Single-Minute Exchange of Die (SMED), First-in, First-out (FIFO), Visual Management, Value Stream Mapping (VSM) e.g. as the cost of these practices are low and employees can undertake low cost training. Moreover, strategy

development and implementation capabilities may then be developed in micro manufacturing enterprises.

There are different dynamic capabilities in the literature as well. In the conceptual model, all dynamic capabilities are illustrated but not all these capabilities are relevant to micro enterprises. Most of the dynamic capabilities require well educated employees, strong financial support, and long term strategy. In the conceptual framework, R&D, innovation and process development capabilities are identified; these can be developed *individually* in large enterprises and SMEs but cannot be developed *individually* in micro manufacturing enterprises. However, micro manufacturing enterprises also introduce new products from time to time. Thus, these three capabilities are combined in the innovation and product development capability. Innovation and product development capability is defined as the ability to make incremental changes to current products and processes within micro manufacturing enterprises. Innovation and product development processes are not defined in micro enterprises. Moreover, networking, alliancing/collaboration, and acquisition capabilities can be developed individually in large enterprises and SMEs but micro enterprises may not allocate dedicated resources for these capabilities. But micro enterprises have networking and collaboration activities. Thus, networking and collaboration capability is defined for micro enterprises which includes networking, collaboration and alliancing activities. The conceptual framework in Figure 3.1 is not validated. Hence, further research questions are formulated as follows:

RQ 3: Is the conceptual model relevant to micro enterprises?

If so:

RQ 4: How do organisational capabilities develop in micro enterprises?

RQ 5: How do organisational capabilities affect each other in micro enterprises?

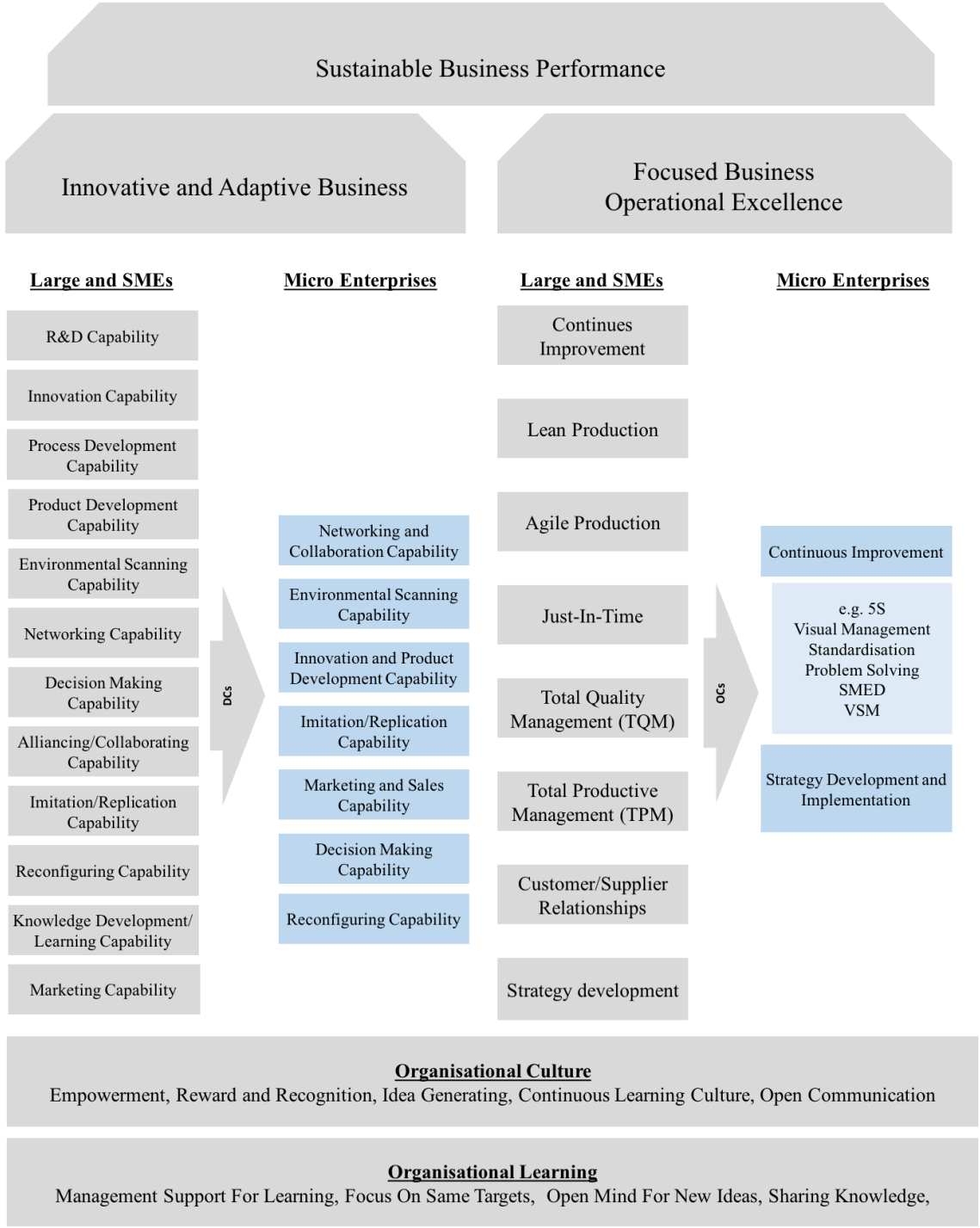

Figure 3.1 Conceptual framework

4 RESEARCH PHILOSOPHIES

It is essential that a researcher understands research philosophies. Easterby-Smith et al. (2004) state that understanding of philosophical issues can help researcher:

- ✓ to clarify research designs
- ✓ to recognise which designs will work and which will not
- ✓ to identify designs that may be outside his or her past experience

In this chapter, the general research paradigms in the management literature are outlined and discussed.

Denzin and Lincoln (2000) define a paradigm as a basic set of beliefs about the world. In the management literature, different research paradigms are used and discussed. In this study, four main research paradigms – positivism, realism, critical realism and interpretivism – are discussed. A research paradigm has two assumptions: ontological and epistemological (Easterby-smith et al., 2004).

4.1 Ontology

Ontology is concerned with the nature of reality. Easterby-smith (2004) defines ontology as "assumptions that we make about the nature of reality". These assumptions might be objective or subjective.

> ***Objective ontology*** is defined as social entities exist in reality external to social actors concerned with their existence.
>
> ***Subjective ontology*** is defined as social phenomena are created from the perceptions and consequent actions of social actors.

Differences between objective and subjective ontologies are illustrated in Figure 4.1.

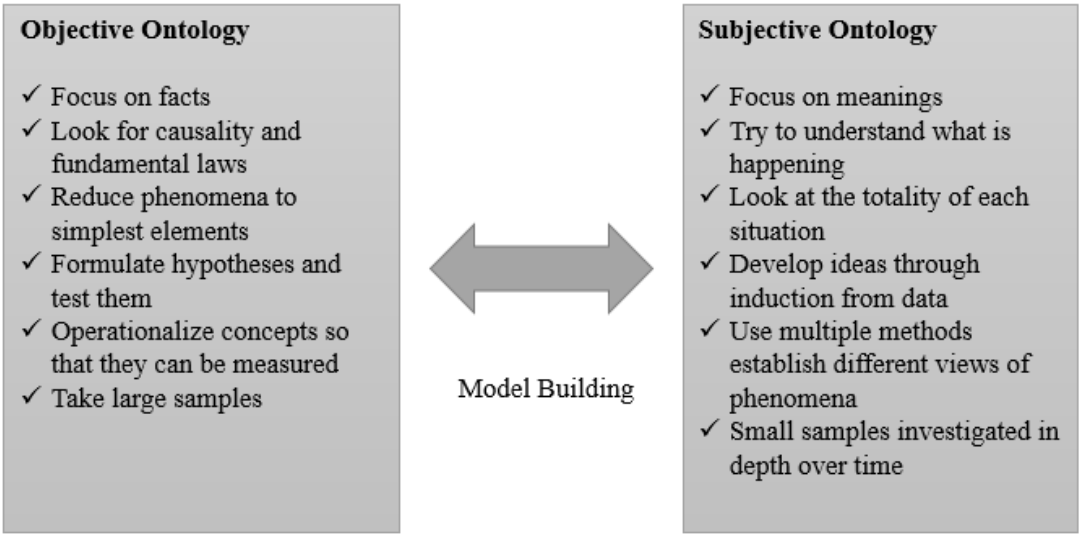

Figure 4.1 Choice of research methods related to ontology (Beech, 2005)

4.2 Epistemology

Epistemology is related to the way we see the nature of reality in the world. Epistemology is defined as a general set of assumptions about the best ways of inquiring into the nature of the world (Easterby-Smith et al., 2004). In this study, four different epistemologies/paradigms in social science are introduced.

4.2.1 Positivism

Positivist inquiry suggests that only true knowledge can exist. Researchers should focus on understanding the connections between phenomena and the invariable and universal laws behind that relationship (Hassard, 1993). The key idea of positivism is that the social world exists externally, and its properties should be measured through objective methods (Easterby-Smith, 2004). Easterby-Smith et al., (2004) sum up characteristics of positivism as follows:

- ✓ Independence – the observer is independent of what is being observed
- ✓ Value-free and scientific – the choice of subject and method can be made objectively, not based on beliefs or interests
- ✓ Hypothetico-deductive – hypothesise a law and deduct what kinds of observations will demonstrate its truth or falsity
- ✓ Large samples
- ✓ Empirical operationalisation – typically quantitative
- ✓ Principles of probability

- ✓ Reductionism – break problems down into their smallest elements
- ✓ Generalisation – sufficient samples should be selected in order to generalise to a population

4.2.2 Realism and Critical Realism

According to Van de Ven (2007), realism contends that there is a real world existing independently of our attempts to know it: that we humans can have knowledge of that world: and that the validity of our knowledge, at least in part, is determined by the way of the world. The essence of realism is that what the senses show us as reality is the truth: that objects have an existence independent of the human mind (Saunders et al., 2009). The realist researcher's position is that the world is concrete and external, and that science can only progress through observations that have a direct correspondence to the phenomena being investigated (Easterby-Smith, 2004). Realism has been discussed by different philosophers. Hence, different variations of realism have been derived such as scientific realism, conjectural realism, realistic pragmatism, and critical realism (Van de Ven, 2007).

Critical realists assume that reality exists independently, but our access to this reality is always limited and skewed by those perceptions (O`Gorman and MacIntosh, 2015). Critical realism claims that there are two steps to experiencing the world. First, there is the thing itself and the sensations it conveys. Second, there is the mental processing that goes on sometime after that sensation meets our senses. Direct realism says that the first step is enough (Saunders et al., 2009). Sayer (1992, p5) states the key assumptions of critical realism as follows:

- ➢ The world exists independently of our knowledge of it.
- ➢ Our knowledge of the world is fallible and theory-laden. Concepts of truth and falsity fail to provide a coherent view of the relationship between knowledge and its object. Nevertheless, knowledge is not immune to empirical check and its effectiveness in informing and explaining successful material practice is not mere accident.
- ➢ Knowledge develops neither wholly continuously, as the steady accumulation of facts within a stable conceptual framework, nor discontinuously, through simultaneous and universal changes in concepts.

- There is necessity in the world; objects—whether natural or social— necessarily have particular powers or ways of acting and particular susceptibilities.
- The world is differentiated and stratified, consisting not only of events, but objects, including structures, which have powers and liabilities capable of generating events. These structures may be present even where, as in the social world and much of the natural world, they do not generate regular patterns of events.
- Social phenomena such as actions, texts and institutions are concept dependent. We not only have to explain their production and material effects but to understand, read or interpret what they mean. Although they have to be interpreted by starting from the researcher's own frames of meaning, by and large they exist regardless of researchers' interpretation of them.
- Science or the production of any kind of knowledge is a social practice. For better or worse (not just worse) the conditions and social relations of the production of knowledge influence its content. Knowledge is also largely— though not exclusively— linguistic, and the nature of language and the way we communicate are not incidental to what is known and communicated. Awareness of these relationships is vital in evaluating knowledge.
- Social science must be critical of its object. In order to be able to explain and understand social phenomena we have to evaluate them critically

4.2.3 Interpretivism

Interpretivism advocates that it is necessary for the researcher to understand differences between humans in our role as social actors. This emphasises the difference between conducting research among people rather than objects such as trucks and computers. Interpretivist researchers look at organisations in-depth and generally point to extensive conversations, observations and secondary data analysis such as company documents and reports in order to overcome generalisability critiques.

However, interpretivist researchers engage with a deeper understanding of meanings in data analysis rather than aiming to generalise things. The interpretivist paradigm tends to deal with different contexts through sense making rather than the objective real world out there. Also, interpretivist researchers generally employ methods such as ethnography, phenomenology, hermeneutics and discourse analysis in order to generate

qualitative data. Data analysis involves observations, interviewing and analysis of transcripts (Beech, 2005).

Table 4.1 Comparison of different paradigms (Saunders et al., 2009)

	Positivism	**Realism/Critical Realism**	**Interpretivism**
Ontology: *The researcher's view of the nature of reality or being*	External, objective and independent of social actors	Is objective. Exists independently of human thoughts and beliefs or knowledge of their existence(realist), but is interpreted through social conditioning (critical realist)	Socially constructed, subjective, may change, multiple
Epistemology: *the researcher's view regarding what constitutes acceptable knowledge*	Only observable phenomena can provide credible data, facts. Focus on causality and law like generalisations, reducing phenomena to simplest elements	Observable phenomena provided credible data, facts. Insufficient data means inaccuracies in sensations (direct realism). Alternatively, phenomena create sensations which are open to misinterpretation (critical realism). Focus on explaining within a context or contexts	Subjective meaning and social phenomena. Focus upon the details of situation, a reality behind these details, subjective meanings motivating actions
Axiology: *the researcher's view of the role of values in research*	Research is undertaken in a value-free way, the researcher is independent of the data and maintains an objective stance	Research is value laden; the researcher is biased by worldviews, cultural experiences and upbringing. These will impact on research	Researcher is value bound, the researcher is part of what is being researched, cannot be separated and so will be subjective

In conclusion, it is substantial for a researcher to make ontological and epistemological decisions before designing the research. Researchers consider different social actors to understand organisational capabilities such as culture, human behaviours, and demographic differences. Furthermore, the aim of this research is to understand organisational capability theories in the context of micro enterprises. Hence, it can be stated that the nature of this research is socially constructed. On the other hand, the industrial engineering background of the researcher provides a positivist perspective to understand/solve any issue within an organisation. There is a conflict between the background of the researcher and the nature of this research. Thus, critical realism, a position that combines two extreme positions and enables the researcher to consider

different aspects of knowledge, was embraced. Easterby-Smith et al. (2004) explain that critical realism makes a conscious compromise between the extreme positions: it recognises social conditions as having real consequences whether or not they are observed and labelled by social scientists; however, it also recognises that concepts are human constructions. Critical realism is the suitable epistemological perspective in this research. As a result, subjective ontology and critical realist epistemology are the chosen philosophical decisions.

4.3 Research Approach

There are two main research approaches – inductive and deductive – in the literature. Saunders et al., (2009) state that it is hard to distinguish the processes of these two approaches since the approaches are linked to each other. A third approach – abductive – is also mentioned in the literature. In a deductive approach, researchers develop hypotheses and propositions from current theories and test them in the real world (Dubois and Gadde, 2002; Ghauri & Grønhaug, 2002; Saunders et al., 2009). In an inductive approach, theory is generated from data (Dubois and Gadde, 2002; Ghauri & Grønhaug, 2002; Saunders et al., 2009). The abductive approach is to be seen as different from a mixture of deductive and inductive approaches (Dubois and Gadde, 2002). The research processes of all three approaches are illustrated in Figure 4.2. Inductive and deductive approaches are commonly used in the literature and differences between these two approaches are represented in Table 4.2.

Table 4.2 Differences between inductive and deductive approaches (Saunders et al., 2009)

Deduction Emphasises	**Induction Emphasises**
Scientific principles Moving from theory to data The need to explain causal relationships between variables The collection of quantitative data The application of controls to ensure validity of data The operationalisation of concepts to ensure clarity of definition A highly structure approach Researcher independence of what is being researched The necessity to select samples of sufficient size in order to generalise conclusions	Gaining an understanding of the meanings human attach to events A close understanding of the research context The collection of qualitative data A more flexible structure to permit changes of research emphasis as the research progresses A realisation that the researcher is part of the research process Less concern with the need to generalise

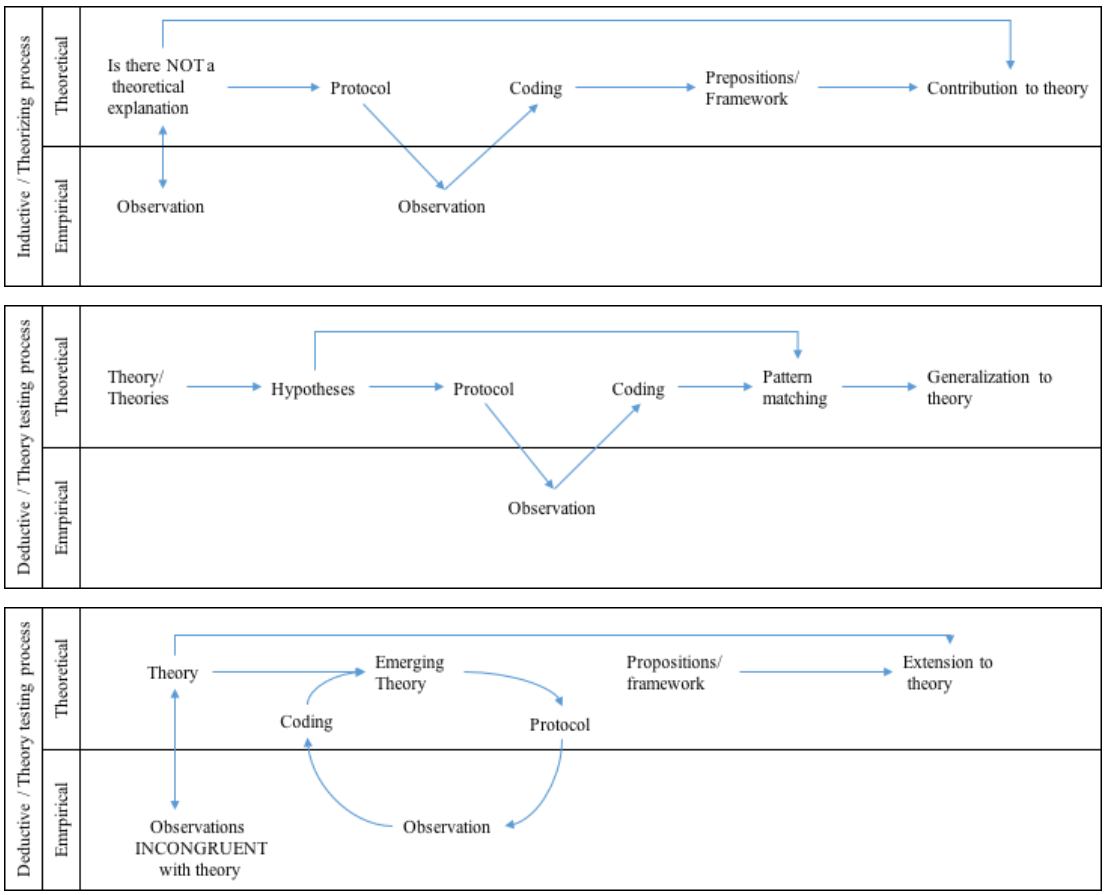

Figure 4.2 Inductive, deductive and abductive approaches (Voss et al., 2015)

The next decision to be made by the researcher is that of which approach is more suitable for the research. Positivism is more related to a deductive approach and interpretivism is more related to induction (Eeasterby-Smith et al., 2004). Furthermore, deduction requires more quantitative data and induction requires more qualitative data. The purpose of this research is to understand organisational capabilities in the context of micro enterprises. There is no current research in the context of micro enterprises to develop hypotheses and test them with quantitative data. Thus, this research follows an inductive approach to extend organisational capability theories into a new context.

4.4 Research Strategies

There are different research strategies in the literature and Creswell (2003) divides them into three groups: quantitative, qualitative and mixed research.

Qualitative research is a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem. The process of research

involves emerging questions and procedures, data typically collected in the participant`s setting, data analysis inductively building from particulars to general themes, and the researcher making interpretations of the meaning of the data. The final written report has a flexible structure. Those who engage in this form of inquiry support a way of looking at research that honours an inductive style, a focus on individual meaning, and the importance of rendering the complexity of a situation (Creswell, 2003).

Quantitative research is a means for testing objective theories by examining the relationship among variables. These variables, in turn, can be measured, typically on instruments, so that numbered data can be analysed using statistical procedures. The final written report has a set structure consisting of introduction, literature and theory, methods, results, and discussion. Like qualitative researchers, those who engage in this form of inquiry have assumptions about testing theories deductively, building in protections against bias, controlling for alternative explanations, and being able to generalise and replicate the findings (Creswell, 2003).

Mixed methods research is an approach to inquiry that combines or associates both qualitative and quantitative forms. It involves philosophical assumptions, the use of qualitative and quantitative approaches, and the mixing of both approaches in a study. Thus, it is more than simply collecting and analysing both kinds of data: it also involves the use of both approaches in tandem so that the overall strength of a study is greater than either qualitative or quantitative research (Creswell, 2003).

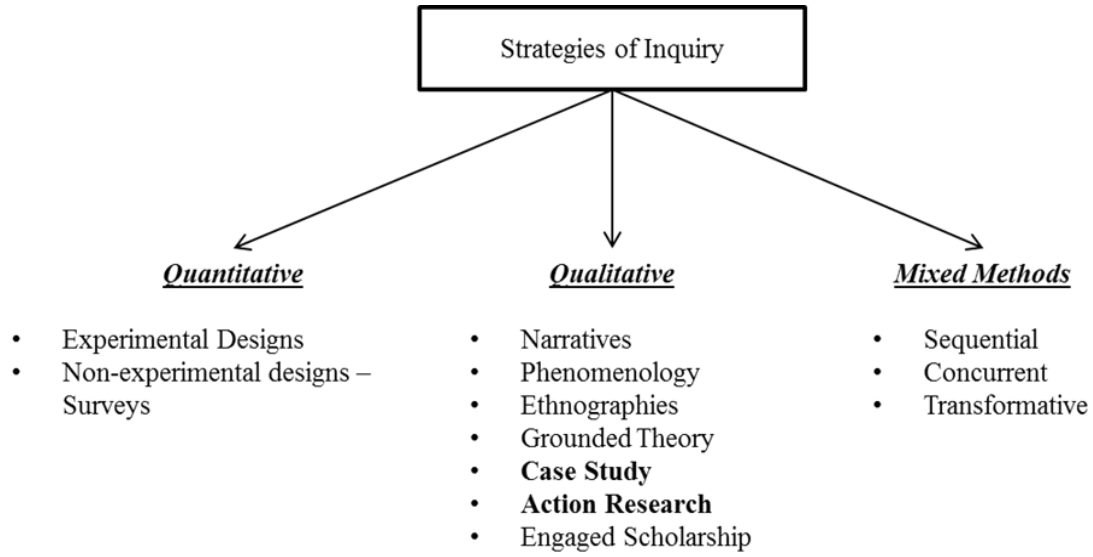

Figure 4.3 Strategies of Inquiry (Creswell, 2003)

Qualitative research strategies are more likely linked to method for inductive research (Saunders et al., 2009; Easterby-Smith et al., 2004). Qualitative research provides deep understanding of social issues or problems (Creswell, 2003). Techniques used in qualitative studies include in-depth interviews, focus group interviews and participant observations. Samples are not meant to represent large populations. Rather, small, purposeful samples of articulate respondents are used because they can provide important information, not because they are representative of a larger group (Reid, 1996). The nature of this research enables the author to follow a qualitative research strategy. In the management literature, different qualitative research strategies are developed as Figure 4.3 illustrates. The aim of this research is to understand how organisational capabilities develop in micro enterprises and how development of organisational capabilities effect each other. In case study methodology, researcher needs to interview with at least 5-6 people in the firm but there is not that many people in micro enterprises to talk and receive reliable information. Furthermore, case study methodology collect information based on past experiences. In survey type of methodology, it is hard to collect information with surveys from micro enterprises which may have low response rate, or questions may be misunderstood. On the other hand, it is stated that the best way of learning about an organisation is to change it, which is the purpose of the action researchers (Easterby-Smith et al., 2004). Furthermore, the action research strategy is considered a good research methodology to understand "organisational development" (Ates, 2008). In an ideal world, someone who

would like to understand the development process of organisational routines would go to a firm, make observations and try to change processes. Action research strategy not only contribute academic community but also enable participated firms to benefit from outcome of the research. Action research methodology enables researcher to observe the impact of his/her and learn through interventions. It is difficult to access firms in the real world but the researcher had the opportunity to access firms to observe and test some practices. As a result, action research methodology is chosen and followed to understand development process of organisational capabilities in micro enterprises

4.4.1 Case Study Method

The Oxford Dictionary defines case study as: (1) A process or record of research into the development of a particular person, group, or situation over a period of time; (2) a particular instance of something used or analysed in order to illustrate a thesis or principle. Furthermore, a case study is a type of empirical inquiry that investigates a contemporary phenomenon in-depth and in a real life context, where the boundaries between the phenomenon and context are unclear (Yin, 2009).

Case study research focuses on describing, understanding, predicting, and/or controlling the individual (i.e., process, animal, person, household, organisation, group, industry, culture, or nationality) (Woodside and Wilson, 2003). Yin (2009) suggests that case studies provide a rich set of data (both quantitative and qualitative) that allow for a detailed investigation of new research issues.

Yin (2009) shows strong sides of case studies as follows: case study is different from other research by two sources of evidence: direct observation of the processes being studied and interviews of the person involved in the processes. The case study`s unique strength is its ability to deal with a full variety of evidence–documents, artefacts, interviews, and observations. Yin also states that the main differences between research methods are question types.

Surveys can answer who, what, where, how many, and how much questions. This method does not need to control behavioural events and can focus on contemporary events.

Experiment can answer “why” and “how” questions, but requires control of behavioural events. Additionally, it can focus on contemporary events.

Case study can provide answers to “how” and “why” questions. Controlling behavioural events is not required to implement this method. Additionally, this method can also focus on contemporary events.

Designing a case study starts by creating a research design. Currently, there are no specific guidelines for the design considerations; however, Yin suggests considering the following five components while designing research (Yin, 2009):

1. A study’s question
2. Its propositions, if any
3. Its unit(s) of analysis
4. The logic linking the data to the propositions
5. The criteria for interpreting the findings.

4.4.2 Action Research Method

Reason and Bradbury provide the following working definition for action research (Reason & Bradbury, 2013);

> “…a participatory, democratic process concerned with developing practical knowing in the pursuit of worthwhile human purposes, grounded in a participatory worldview. It seeks to bring action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern to people, and more generally the flourishing of individual persons and their communities.”

Action research is a way of systematically developing knowledge and knowing. However, it differs from other research methods in terms of purpose, relationships and ways of conceiving knowledge (Reason and Bradbury, 2013). Moreover, action research also has an alternative relationship with practice when compared to other methods. The supporters of action research propose that theory without an impact on practice is unlikely to create a change and, therefore, there should be a more interactive relationship between theory and practice (Dickens and Watkins, 1999).

Action research is more likely to be a collaborative approach between the researcher and the organisation or unit. The key purpose to action research is to make an impact and change by being involved in process. This type of research settings is commonly used in the "Organisational Development" field (Ates, 2008). According to Easterby-Smith et al. (2004, p. 43-44) the action research approach shows the following two attributes:

> "a belief that the best way of learning about an organisation or social system is through attempting to change it, and this therefore should to some extent be the objective of the action researcher"
>
> "the belief that those people most likely to be affected by, or involved in implementing, these changes should as far as possible become involved in the research process itself"

4.4.3 Similarities between Case Study and Action Research

Both case study and action research are generic terms covering many forms of research (Blichfeldt and Andersen, 2006). Case-study research comprises differences which could illustrate inductive and deductive, or positivistic and interpretive forms of research (Caveye, 1996). Likewise, action research also embraces a range of perspectives and research designs; for example, positivistic experimental designs and more interventionist designs aiming at facilitated learning among participants (Blichfeldt and Andersen, 2006).

Both case-study research and action research are concerned with the researcher gaining an in-depth understanding of particular phenomena in real-world settings. The two types of research seem quite similar in their focus on the field or the world of action, while embracing considerable diversity in theory and practice (Blichfeldt and Andersen, 2006).

4.4.4 Differences between Action Research and Case Study

Although both case-study research and action research deal with context-bound knowledge, action research offers a greater role to the participants in defining the issues to be addressed. Mostly, a case study begins with the researcher's interest in a particular set of phenomena, whereas an action research project begins mostly with the issues and

concerns within some practical situation, with which the action researcher interacts. Therefore, action research is characterised by "the active and deliberate self-involvement of the researcher in the context of his/her investigation" (McKay & Marshall, 2001). On the other hand, case researchers mostly draw on the participants in order to investigate phenomena specified by the researcher prior to undertaking the study. Consequently, collaboration between the researcher and participants seems more critical to the success of an action research endeavour than it is for case-study research, which relies more on the participants as sources of evidence.

A further difference between action research and case study relates to researchers' stance on how and to whom they disseminate their results. Although case researchers sometimes take it upon themselves to disseminate their findings to those who participated in the study, the findings are primarily targeted at the academic community. On the other hand, action researchers have an obligation to feed data back into the community with which they collaborated when identifying and solving a practical problem. In privileging one set of target audience, researchers sometimes neglect other relevant audiences. This has led to observation such: "action researchers 'have forgotten' to report in detail their research activities and how they have arrived 'step-by-step' at their interpretations and actions, which usually means that the knowledge creation of action research is partially neglected in the literature" (Grønhaug & Olsson, 1999).

Another issue that discriminates between case research and action research is that action researchers, to a greater extent, do not declare and discuss the intellectual framework of ideas they bring to bear on their projects (Checkland & Holwell, 1998). In comparison, case researchers seem more aware of the relations between their initial frameworks and the empirical findings.

Moreover, there is also the difficulty of generalising results from action research (McKay & Marshall, 2001). Generally, case researchers do not experience this difficulty to the same extent, because case researchers have better possibilities for choosing the contexts that facilitate analytical generalisation, i.e., abstractions based on empirical material. Meyer (2000) observes that action research "is often written up as a case study and it is important to note that generalisation is therefore different from the

more traditional forms of research." Further, he argues that case study and action research are "means by which theoretical explanations of phenomena can be generated using analytic induction" which are "rich in conceptual detail" and "readers are invited to judge the relevance of the findings to their own practice situation" (Meyer, 2000).

4.5 Data Collection

It is important to choose right data collection method. In the literature, there are different data collection techniques; questionnaire, interview, direct/participant observation, diary records, documentation, archival records are some of the suggested data collection methods (Saunders et al., 2007). The advantages and disadvantages of each data collection technique are represented in Table 4.3.

Table 4.3 Comparison data collection techniques

Data Collection Techniques	**Advantages**	**Disadvantages**
Observation	✓ Data can be collected where and when an activity is occurring ✓ More data can be obtained and people`s willingness is not important to provide data ✓ Observation provides what exactly is happening rather than what people say	✓ Observer bias ✓ Hawthorne effect – people perform differently when they know they are being observed ✓ Does not provide data on why people behave the way they do
Document Review	✓ Low cost ✓ Provides good background information ✓ Unobtrusive ✓ May explore issues not discovered before	✓ Data may be out of date, disorganised, inapplicable or unavailable ✓ Data may be incomplete or inaccurate ✓ Time consuming
Interviews	✓ Useful for gaining insight and context into a topic ✓ Allows respondents to describe what is important to them ✓ Useful for gathering quotes and stories	✓ Susceptible to interview bias ✓ Time consuming and expensive ✓ May seem intrusive to the respondent
Focus Groups	✓ Group dynamics can provide useful data that individual data collection does not provide	✓ Susceptible to facilitator bias ✓ Discussion can be dominated or misled by a few individuals ✓ Data analysis is time consuming and needs to be well planned in advance ✓ Does not provide valid data at the individual level

Surveys and Questionnaires	✓ Administration is comparatively inexpensive and easy even when gathering data from large numbers of people ✓ Reduces chance of evaluator bias because the same questions are asked of all respondents ✓ Many people are familiar with surveys ✓ Some people feel more comfortable responding to a survey than participating in an interview ✓ Tabulation of closed-ended responses is an easy and straightforward process	✓ Risk of low response rates ✓ Questions may not have the same meaning to all respondents ✓ Lack of contact with respondents ✓ Unable to probe for additional details ✓ Time consuming to develop good questions

In this research, interviews and direct observations are used for data collection. Interviews are conducted with semi-structured questionnaires which can be found in the appendix. Interview provides rich information about processes and organisations. Semi-structured questionnaires enable researchers to learn more than his/her expectations. For instance, first interviews with each firm took from 45 minutes to three hours in this research. Direct observations are an essential part of action research because interviews only provide information that is visible to the interviewee. Thus, direct observations are conducted to understand organisational issues that are not identified by owners/managers. These two data collection methods provide rich and complementary data for this research.

4.6 Qualitative Data Analysis

Saunders et al. (2009) state that qualitative data analysis akin to completing a jigsaw puzzle where the pieces are represented by the data. Qualitative data refers to all non-numeric data or data that have not been quantified (Saunders et al., 2009). Analysis of large amounts of data gathered through interview or observation is one of the biggest challenges in qualitative research (Yin, 2003; Eisenhardt, 1989). The challenge of qualitative data is how to put rich information into an explicit format (Easterby-Smith et al., 2002). Miles and Huberman (1994) suggest techniques for data presentation and analysis for qualitative data.

Several methods for qualitative data analysis have been proposed to date that include content analysis, grounded theory, cognitive mapping, repertory grid, protocol analysis, pattern matching, and critical incident techniques to name a few (Easterby-Smith et al., 2004; Miles and Huberman, 1994; Yin, 2003). Content analysis and pattern matching are widely cited techniques for qualitative data analysis (Saunders et al., 2007; Easterby-Smith, 2004). Content analysis facilitates accepting or rejecting *a priori* hypotheses by identifying causally linked variables. Similarly, pattern matching is used in explanatory or descriptive case studies to establish causal relationships between variables, thus ensuring internal validity (Eisenhardt, 1989). The software packages such as NVIVO, NUD.IST, and CAQDAS are also becoming popular for coding and generating patterns from large amounts of narrative texts collected from open-ended interviews or from historic documents (Yin, 2003). Two of the other most commonly used and cited techniques for qualitative data analysis include a three-step proposal by Miles and Huberman (1994): data reduction, data display, and drawing conclusions; and a two-step process proposed by Eisenhardt (1989): within- and cross-case analysis.

4.6.1 Data Reduction

In the first step of qualitative data analysis, the researcher is required to sharpen, sort, focus, discard, or organise data, accumulated through written-up field notes or transcription, to draw a final conclusion and verify it (Miles and Huberman, 1994). This involves activities such as written summaries of cases, coding, generating themes, making clusters or partitions, to name a few.

4.6.2 Data Display

Miles and Huberman (1994) define display as "an organized compressed assembly of information that permits conclusion drawing and action". The data display helps the audience to understand things happening within or across cases, based on which some further actions could be taken. Several methods of data display suggested by Miles and Huberman (1994) include charts, matrixes, tables, grid, and networks.

4.6.3 Data Analysis

Data analysis is the next step once the researcher has identified the methods of data display. Within-case analysis is the next step in analysis followed by cross-case analysis

of participating case study firms. In within-case analysis, detailed write-ups (case-study reports) are used to gain familiarity with each case as a stand-alone entity (Eisenhardt, 1989). This facilitates identification of key themes and unique findings emerging from each case which could be used later in cross-case analysis to compare and contrast findings across cases. Within-case analysis familiarises the researcher with individual cases that further accelerates the cross-case analysis. In cross-case analysis, the author compares the findings across the cases with respect to categories or dimensions identified during the data reduction process or using the themes developed in the interview protocol for comparison across cases. It looks into similarities and differences between cases. It also enhances the external validity or generalisability of the research findings (Voss et al., 2002). A minimum of two samples are required for cross-case comparison. Based on within-case and cross-case analysis, conclusions are drawn related to the research questions posed.

4.7 Summary

Research philosophies are outlined in this chapter. Researchers should make some decisions at different levels. Figure 4.4 represents the decisions made by the researcher based on the nature of the research and researcher`s choices. Researchers cannot neglect the social actors that have an influence on the development of organisational capabilities in micro enterprises. Thus, subjective ontology is more suitable for this research. Critical realism is chosen at an epistemological level as the background of the researcher is more relevant to a positivist viewpoint and the nature of the research is more relevant to an interpretivist viewpoint. Furthermore, an inductive research approach is chosen as organisational capability theories are developed in mostly large enterprises and with little research on SMEs. There is no prior knowledge of organisational capabilities in micro enterprises. Thus, inductive exploratory research is found suitable to extend organisational capability theories into a new context.

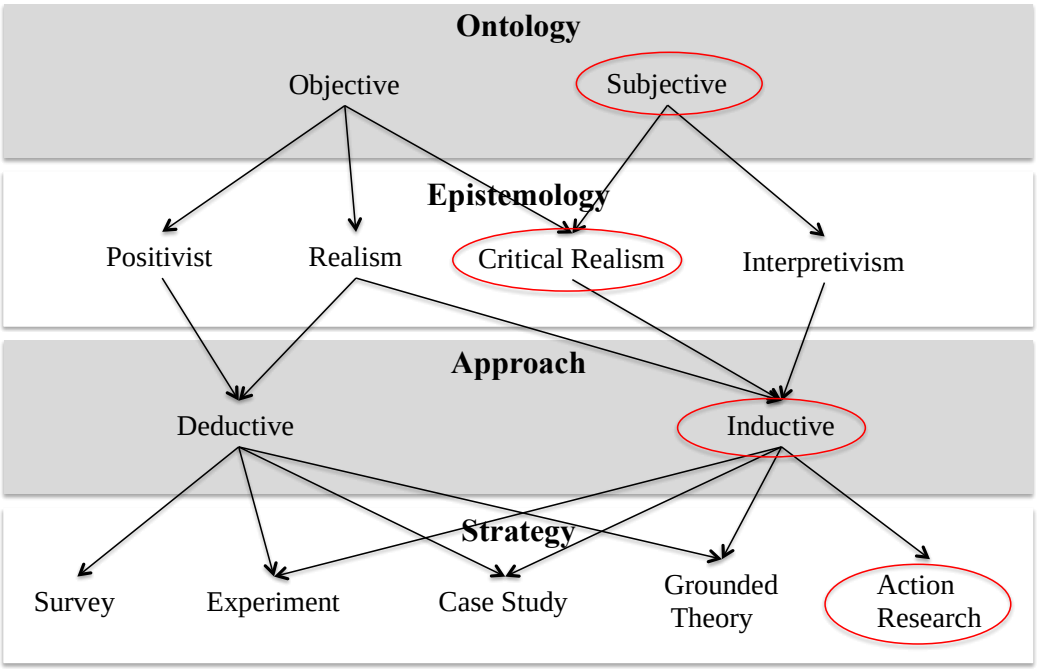

Figure 4.4 Philosophical decisions of author

5 RESEARCH DESIGN: ACTION RESEARCH

The research design plays an important role to enable understanding of the research issues and planning how to conduct the research. Philleber et al., (1980), cited in Yin (2003), define research design as *"a blueprint of research dealing with at least four problems: what questions to study; what data are relevant; what data to collect; and how to analyse the results."* This definition clarifies the aspects a researcher needs to consider before conducting research. Thus, the stages followed to conduct this research include:

- Identifying the research purpose and questions
- Deciding the research strategy
- Case selection
- Deciding the data collection method
- Deciding the data analysis methods

5.1 Research Purpose and Questions

In the literature, three different research purposes are defined as exploratory, descriptive and explanatory (Robson, 2002). The purpose of exploratory study is to understand "what is happening: to seek new insights; to ask questions and to assess phenomena in a new light" (Robson, 2002). Robson (2002) states that the objective of descriptive research is "to portray an accurate profile of persons, events or situations". Finally, explanatory research is defined as "research that establishes causal relationships between variables" (Saunders et al., 2009).

The purpose of this research is to understand the development of organisational (dynamic and operational) capabilities in micro enterprises. For this purpose, the organisational capability theories literature is reviewed and two initial research questions are answered by literature and empirical study, explained in chapter two. Subsequently, four micro enterprises are agreed upon to conduct action research to answer the following research questions:

RQ 4 How do organisational capabilities develop in micro enterprises?

RQ 4a How do foundation level capabilities (culture and learning) develop in micro enterprises?

RQ 4b How do operational capabilities develop in micro enterprises?

RQ 4c How do dynamic capabilities develop in micro enterprises?

RQ5 How do organisational capabilities affect each other in micro enterprises?

Table 5.1 Research purpose and possible research questions (Marshall and Rossman, 1999)

Purpose of the Research	**General Research Questions**
Descriptive To document and describe the phenomenon of interest	What are the salient actions, events, beliefs, attitudes, and social structures and processes occurring in this phenomenon?
Exploratory To investigate little-understood phenomena To identify or discover important categories of meaning To generate hypotheses for further research	What is happening in this social programme? What are the salient themes, patterns, or categories of meaning for participants? How are these patterns linked with one another?
Explanatory To explain the patterns related to the phenomenon in question To identify plausible relationships shaping the phenomenon	What events, beliefs, attitudes, or policies shape this phenomenon? How do these forces interact to result in the phenomenon?

5.2 Action Research as the Research Strategy

Action research and case study have been compared above; consequently action research methodology is chosen as the research methodology for this research. Stringer (2014) explains the contribution of action research as grounded in a qualitative research paradigm whose purpose is to gain greater clarity and understanding of a question, problem or issue. Action research enables a researcher to understand how things are happening rather than what is happening (Stringer, 2013). Furthermore, action research methods enable the researcher to understand the development of capabilities in micro enterprises by higher involvement with each case.

Susman and Evered (1978) suggest five stages of research, as shown in Figure 5.1. The *diagnosing* stage is important in the identification of problems. First, diagnostics are conducted to understand a firm's current capability levels and understand current

organisation issues. The *action planning* stage comprises planning actions that aim to solve problems. In this research, interventions were designed to solve company issues as well as to develop certain organisational capabilities. The *action taking* stage is the implementation of planned actions. At this stage, the researcher was not involved in the implementation of interventions but provided the required training and explanations. After actions are completed, the *evaluation* of outcomes follows. This includes a determination of theoretical effects of the actions identified, and whether these effects solve the problems or not. The researcher identified successful and unsuccessful interventions and measured final maturity levels. Collected data is analysed in chapter 7 and 8. *Specifying learning* is the identification of general findings (whether an action was successful or unsuccessful). The contributions of the research are represented in chapter 9 and 10.

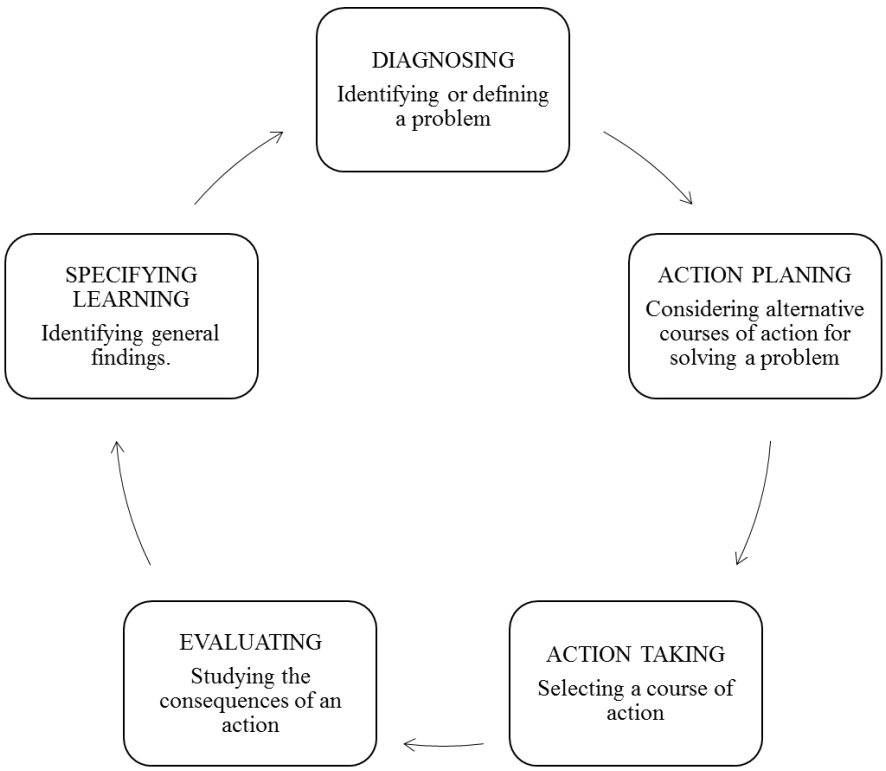

Figure 5.1 Cyclical process of action research (Adopted from Susman and Evered, 1978)

5.3 Case Selection

Selecting the case is a critical stage of any research and it should match the aim of the research. In this research, some criteria are identified to choose each case as follows:

- Manufacturing micro enterprises that have less than 20 employees
- Micro enterprises that are growth oriented
- Firms from different sectors can create richer data to understand micro enterprises
- Location of firm; Northern Black Sea region of Turkey due to the funding of this research

At the searching stage, the researcher contacted Trabzon Trade Chambers, Northern Black Sea Regional Development Agency and KOSGEB to find micro enterprises that could possibly be growth oriented and willing to participate in the research. Furthermore, I received the contact information of 20 firms from agencies and contacted them via phone calls. Some owners did not want to participate in this research. Owners of eight firms accepted to meet for first interview and discuss the project. Two of these firms were not growth oriented and two did not want to participate in this research. As a result, four micro manufacturing firms agreed to participate in this research.

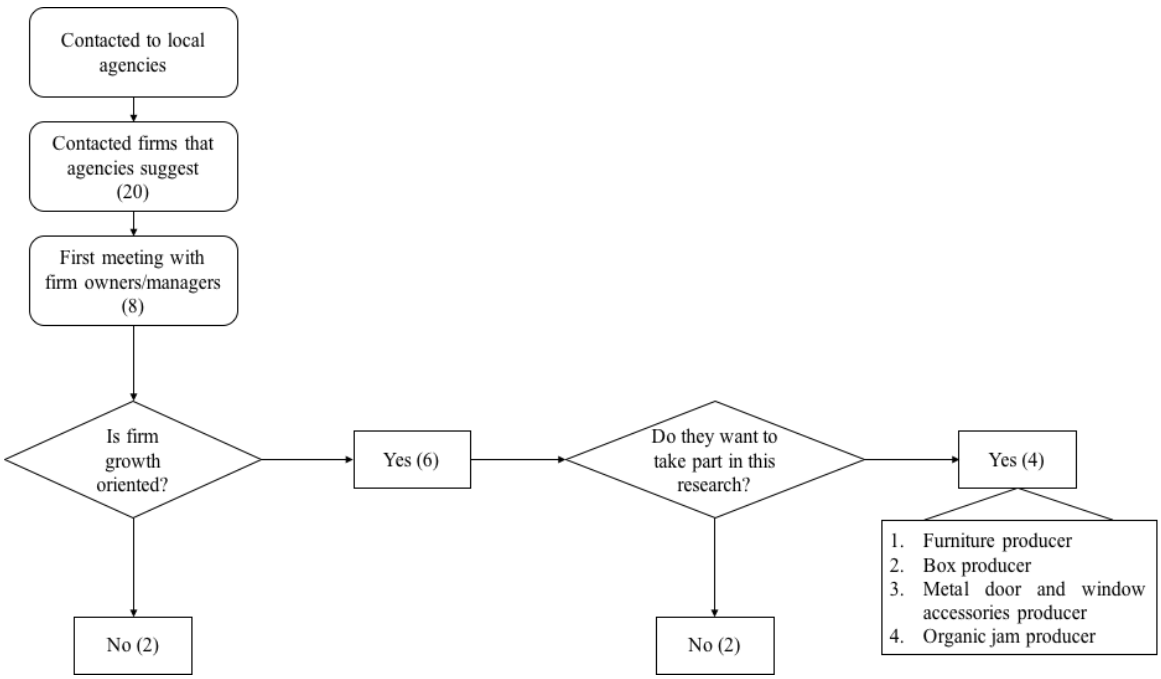

Figure 5.2 Case selection processes

5.4 Data Collection Method

A data collection protocol is designed to create consistency in data. This protocol can be found in the appendix. Figure 5.3 illustrates the data collection process. Data is collected via interviews and observations. Interview is a common data collection strategy in qualitative research (Saunders et al., 2009). It is also used in this research to collect data. Two different interviews were used in this research – semi-structured interviews and spontaneous interviews (daily conservations during observations and company visits). Semi-structured interviews have the advantage of collecting more data than the researcher expects. Moreover, daily conversations provide different information that is situational and spontaneous. In addition, the researcher made observations in a structured way in order to overcome disadvantages. The researcher explained the research with each employee to gain their trust and observe actually how they perform. Furthermore, the researcher talked and asked questions during the observation in order not to develop wrong ideas. Observations are seen as a subjective way to collect data but researcher followed a structure to observe processes within each organisation. The data collection process is illustrated in Figure 5.3.

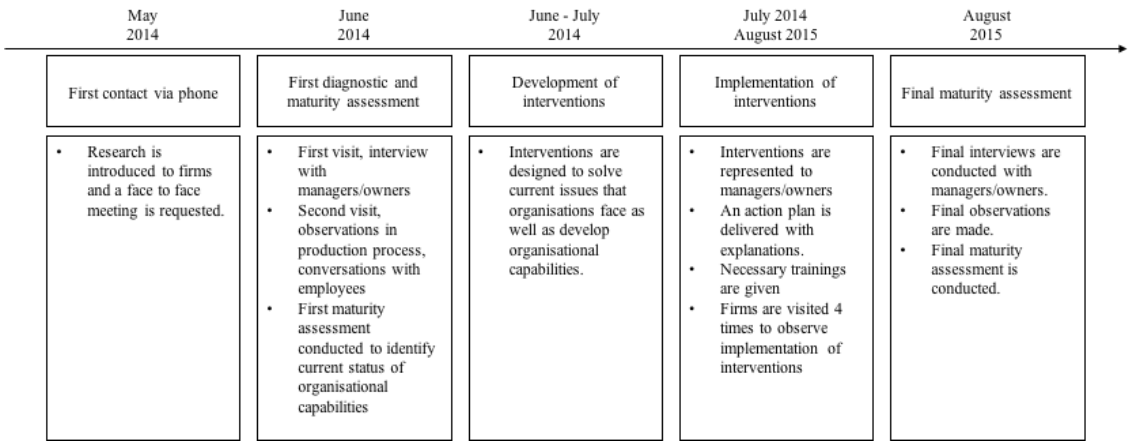

Figure 5.3 Timeline of data collection

5.5 Data Analysis Methods

Within case analysis and cross-case analysis are conducted to understand the development of organisational capabilities in micro enterprises. Within case analysis provides deep understanding of phenomena within a context. The development process of organisational capabilities is investigated at four firms and the collected information is analysed by using maturity assessment, cause-effect and cause-root diagrams.

Chapter 7 and 8 include these data analysis processes and conclude with the findings of this research.

5.6 Summary

In this chapter, the research design is justified to understand the development of organisational capabilities in micro manufacturing firms. Case selection criteria, data collection methods and data analysis methods are chosen. Figure 5.4 represents a roadmap of this research.

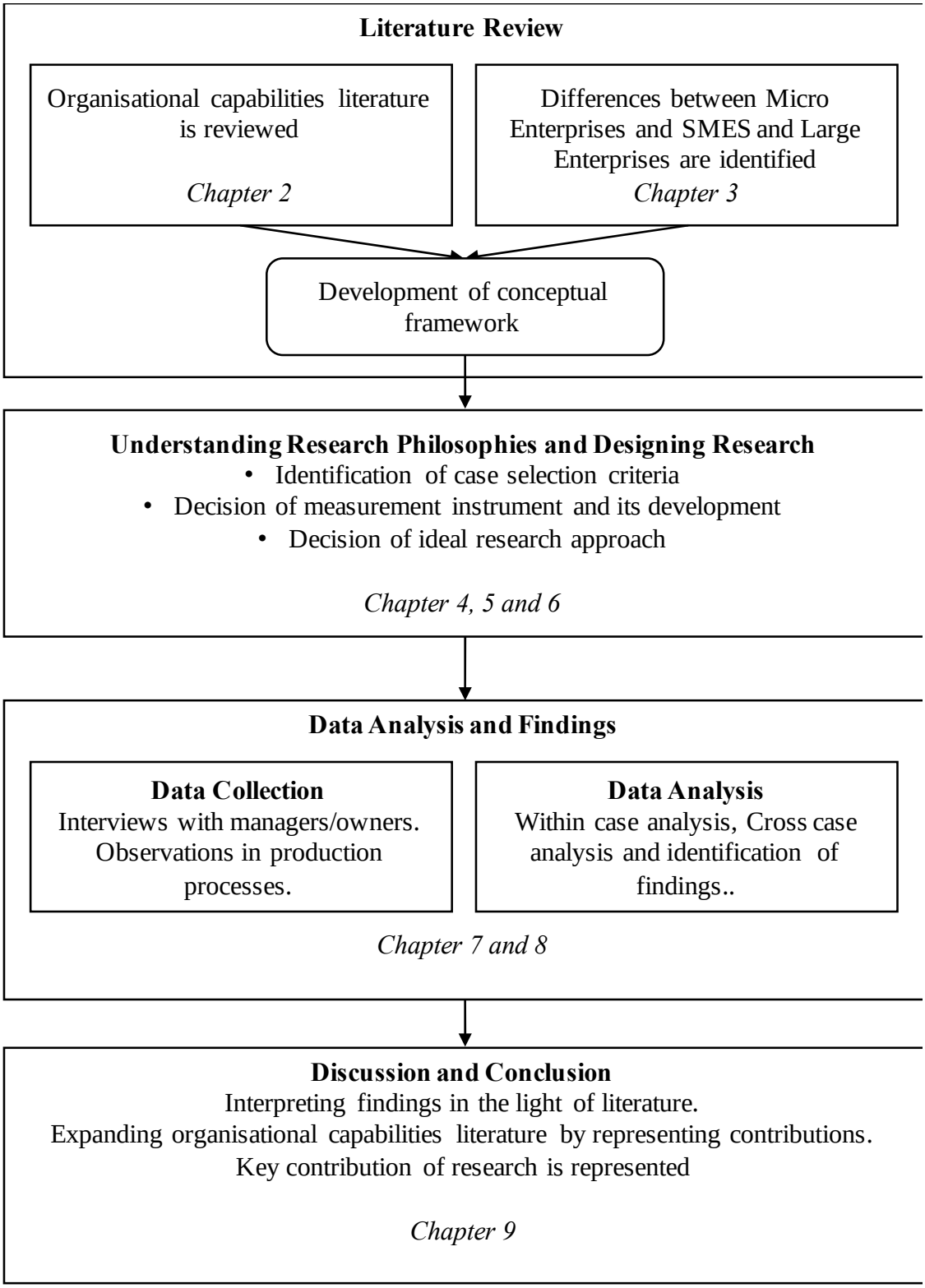

Figure 5.4 Research design

6 CAPABILITY MEASUREMENT IN MICRO ENTERPRISES

Different types of measurement approach such as developing scales based on the dimensions of capabilities (Kerrin, 1999; Burin and Freeze, 2005; Harigopal and Satyadas, 2001), and benchmarking and comparative studies (Sako, 2004; Brax and Jonsson, 2009; Vorhies and Morgan, 2005; Goh and Richards, 1997; Goh, 2003) exist in the current literature. For example, there is sufficient study on the measurement of innovation capability in the management literature. Jerez-Gomez et al. (2005) propose a measurement tool for learning capability. In their study, dimensions of organisational learning capability are identified as managerial commitment, system perspective, openness and experimentation, and knowledge transfer and integration. They designed a scale based on the dimensions and 21 factors that are related to each dimension. The questionnaires were then sent to organisations. Another study by Vicente et al., (2014) determines the dimensions of innovation capability as product development capability, innovativeness, strategic capability and technological capability. They use scales from the literature for each dimension. They suggest statements for each dimension and ask their participant to agree or disagree with the statement. However, these measurement tools are not matched with the purpose of this research. In the management literature, there is insufficient knowledge on micro enterprises to create statements for each organisational capability. As an action research setting is followed in this research, it is essential to be able to measure the development of capabilities. As discussed in chapter 2, capabilities have two dimensions: maturity and capacity. Maturity assessment is a key part of this research to understand whether capabilities remain undeveloped due to lack of capacity or maturity. Thus, an alternative approach is used to measure capabilities in this study; a maturity model is developed to assess and understand the development of organisational capabilities in micro enterprises. Maturity model provides required information for intervention designs as well.

6.1 Maturity Models

First, a maturity model is developed to help organisations to improve their software processes (Paulk et al., 1995, p5). Today, maturity models are used in many disciplines (Bourne, 2009, p156). A maturity model is defined as a conceptual model that consists of a sequence of discrete maturity levels for a class of processes in one or more business domains, and represents an anticipated, desired, or typical evolutionary path for these

processes (Becker et al., 2009). There are three different types of maturity models in terms of the purpose: descriptive, prescriptive and comparative (Roegliner and Poeppelbus, 2012). The descriptive type of maturity model is used for assessment purposes. The prescriptive type of maturity model identifies desirable future maturity by providing guidance on how to implement improvement measures. A comparative type of maturity model provides internal and external benchmarking (Roegliner and Poeppelbus, 2012). The benefits of maturity models can be summarised as follows:

- defines a set priorities on which the organisation can focus
- creates a common language and a shared vision within the boundaries of the maturity model
- provides measurement of processes with reliable and consistent appraisals (Paulk et al., 1995; Bourne, 2009).

There is a risk of human bias at the assessment and development stage of maturity models. However, there are strategies to create an objective maturity model as explained in the following section.

6.1.1 Development of Maturity Model

Maturity models have been designed to assess the maturity (i.e., competency, capability, level of sophistication) of a selected domain based on a more or less comprehensive set of criteria. Harigopal and Satyadas (2001) suggest four steps to develop a maturity model as:

Step 1. Define a set of goals for the maturity model.

Step 2. Define a set of criteria that will identify the CE maturity of an organisation.

Step 3. Derive the definitions of each level of the MMs in terms of the criteria. This should help classify the transformational and technology enablers to a particular level of maturity.

Step 4. Define key maturity areas for each level of the maturity model.

In this research, the Harigopal and Satyadas (2001) maturity model development framework is adopted and the steps followed to create a maturity model for maturity assessment include:

1. Defining the objectives of the maturity model
2. Identifying the capability areas and defining their objectives

3. Determining the definition of each level for each capability area.

Step 1 – Defining the objectives of the maturity model

The main purpose of this maturity model is to assess maturity levels of certain organisational capabilities in micro enterprises. It should also assist the researcher to develop interventions to develop capabilities.

Step 2 – Identification of capability areas

Organisational capabilities that are relevant to micro enterprises are identified in the conceptual framework. For each capability area, objectives are defined as follows:

- ✓ *Learning* – An organisation that learned to learn. Learning processes are developed and established. It is encouraged and monitored by managers.
- ✓ *Organisational Culture* – A culture that encourages participation and learning. Employees are willing to have more responsibilities and the owner/manager delegates his authority to create a more democratic working environment. Employees participate in improvement activities and contribute to the development of the organisation.
- ✓ *Strategy development and implementation* – The ability to develop and deploy a strategy and revise this strategy in changing environments. Strategies are shared with employees and goals and priorities for each level are defined. Employees are motivated to achieve the same goals with the business.
- ✓ *Continuous improvement* – All employees participate to improve incrementally current situations. Improvement activities are encouraged, monitored and rewarded by the management team.
- ✓ *Decision Making Capability* – Well-established decision-making procedures are followed.
- ✓ *Networking and Collaboration Capability* – A firm that actively looks for networking and collaboration opportunities and acts before its competitors.
- ✓ *Marketing and Sales Capability* – A firm that develops marketing processes to attract new customers and sustain current customers to increase sales.
- ✓ *Imitation/Replication Capability* – A firm that senses imitable products before its competitor and is able to produce them within acceptable costs.
- ✓ *Innovation and Product Development Capability* – A firm that senses specific customers' needs and fulfils these needs.

- ✓ *Environment-scanning Capability* – A firm that looks for internal and external opportunities and threats continuously.

Step 3 – Definition of each level

Sets of criteria are defined based on the goals and objectives of each organisational capability, as Table 6.1 illustrates. It is essential to consider that this maturity model will be used to identify organisational capabilities in micro enterprises. Hence, criteria are defined for micro enterprises and this maturity model can only be used to measure the maturity level of organisational capabilities of micro enterprises. Definition of maturity levels can be different in each maturity model based on its purpose. In literature, different levels exist such as Bititci et al. (2011) define three broad maturity level as basic, intermediate, and advanced, Bititci (2015) mentions five common maturity level as uncertainty, awakening, enlightenment, wisdom and certainty. In this research four maturity level is defined based on the needs of this research as follow;

- ➢ Basic – activities in the capability area are poorly controlled and/or not exist
- ➢ Intermediate – activities in the capability area are repeatable and produce predictable outcomes
- ➢ Advanced – activities in the capability area are defined and managed to improve
- ➢ Leading – activities in the capability area can be considered as the best practise which produce leading outcomes.

Table 6.1 Maturity model for capability assessment of organisational capabilities in Micro Enterprises

Foundation Level Capabilities				
	Basic	Intermediate	Advanced	Leading
Learning	✓ There are no learning activities.	✓ Learning activities are limited to the owner/manager	✓ Learning activities are individual and not shared with any other people in the firm	✓ Learning is encouraged with established procedures ✓ Knowledge is shared within the firm
Culture				
Employee Participation	✓ No teamwork ✓ Low integration ✓ Low loyalty ✓ No activity to create new ideas ✓ Employees cannot see them as an important part of the organisation	✓ Teamwork is developed in certain areas ✓ Some employees have ideas but cannot share them with their managers because they believe ideas will not be considered.	✓ High level of teamwork between employees from different departments ✓ Idea creation and sharing is developed but there is no systematic support for these activities	✓ High integration ✓ High loyalty ✓ Support to create and share new ideas ✓ Employees believe that their contributions are important and considered
Organisation Structure				
Empowerment A leader or manager shares his or her power with subordinates. To empower, implies the granting of power-delegation of authority	✓ Managers command and control ✓ Decisions made by managers ✓ Employees do not have any responsibilities other than their work. ✓ Organisational structure is vertical	✓ Some experienced employees have limited control ✓ Manager delegates some of their responsibilities to lower levels.	✓ Employees have more responsibilities ✓ Managers/Owners motivate employees to have more responsibilities ✓ Empowerment is used as a motivation source to develop employees (reward system)	✓ Authority is shared within organisation ✓ Organisational structure is horizontal ✓ Decision-making process is more participative

Operational Capabilities				
Strategy Development and Implementation	Basic	Intermediate	Advanced	Leading
Strategy Development	✓ Do not have any strategy ✓ Do not know how to develop a strategy ✓ Do not know what customer value is	✓ Not written but can be roughly described by owner ✓ Fire-fighting and opportunity sensing based strategies ✓ Firm cannot identify specific customers' needs but have rough ideas ✓ Basic understanding of revenue and cost calculation	✓ Some strategy development activities exist ✓ Strategy developed based on facts and opportunities ✓ Firm knows why customers choose them ✓ Clear profit formula and cost calculation	✓ Written mission and vision statements ✓ Long term plans developed to achieve goals ✓ Established processes to understand customer value and response to the change in customer value by developing new strategies ✓ Opportunity scanning for new profit formulations and cost reduction activities
Strategy Implementation	✓ Employees do not have any knowledge ✓ Processes are not designed to support to strategy	✓ Only a few employees are aware of business targets and strategies ✓ Strategies not shared with everyone in the firm	✓ Goals and priorities shared with employees with visual illustrations ✓ Employees aware of their role to achieve business targets ✓	✓ Established processes to apply strategy changes in short time ✓ Employees contribute strategy implementation by providing feedback and new ideas
Continuous Improvement				
5S 5S is a simple tool for organising the workplace in a clean, efficient and safe manner to enhance productivity, visual management and to ensure the introduction of standardised working	✓ Unorganised workplace ✓ No standard order ✓ Unsafe workplace ✓ No visual warnings or explanations	✓ Machines and equipment cleaned after work	✓ Equipment separated by purpose with standard placement ✓ Stock areas clarified ✓ Visual warnings and explanations used	✓ Work place designed to prevent disorder activities ✓ Employees responsible to sustain standard order ✓ Continuously improve current situation

	Visual Management Visual management presents information in an easy to understand way by using visual signals instead of text, so that workers can follow them easily	✓ No visual signal	✓ Common visual signs such as No Smoking; Exit	✓ Task boards to show who does what and how	✓ When entering the workplace, people can simply understand what's going on
	Standardisation Standards are documents, established by consensus and approved by a recognised body that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context (ISO, 1996)	✓ No control equipment ✓ No documents for defining work processes ✓ No standard for quality of products	✓ Some control equipment ✓ Quality standards defined but not checked properly ✓ Processes written but employees do not follow	✓ Reliable control equipment ✓ Quality standards important and control made of proper equipment ✓ Employees follow written procedures	✓ Control of control equipment periodically
	Problem Solving Using a methodological approach to solve current and future problems of company	✓ Ignoring all problems and no activity at all to solve them.	✓ Some problem solving activities (when it occurs) no well-established methodology followed	✓ Solve problems with methodological approaches	✓ Investigate possible future problems and develop solutions for prevention
	SMED SMED is a concept to reduce changeover time (i.e., minimise the time lost in changing over from one size to another, or one product to another, or one service type to another).	✓ Changeover not seen as a waste	✓ Changeover seen as a waste but no activity for improvement	✓ Attempts to improve changeovers	✓ Use of systematic tools to improve changeover performance

Dynamic Capabilities				
	Basic	Intermediate	Advanced	Leading
Networking and Collaboration Capability The capacity of the firm to develop a purposeful set of routines within its networks, resulting in the generation of new resource configurations and the firm's capacity to integrate, reconfigure, gain and release resource combinations	✓ No networking and collaboration activities ✓ No search for any collaboration opportunity	✓ Attempts to collaborate with close relatives and friends ✓ Limited search for collaboration	✓ Collaboration with suppliers and customers ✓ Searching for new collaboration opportunities	✓ Constantly looking for networking and collaboration opportunities
Environment-scanning Capability Environment-scanning is the monitoring, evaluating, and disseminating of information to key managers within the organisation	✓ No-one in organisation scanning or monitoring sector, or other sectors	✓ Limited scanning activities such as talking with friends from other companies, reading sectoral magazines	✓ Usually spend free time scanning activities such as attending expos, reading different sectoral magazines, visiting universities	✓ Employees systematically monitor and scan their sectors and other sectors
Innovation and Product Development Capability The ability to continuously transform knowledge and ideas into new products, processes and systems for the benefit of the firm and its stakeholders Product development capability is the complete process of bringing a new product to market	✓ No interest to change or innovate products	✓ Ideas generated but cannot convert ideas to new products ✓ Incremental changes made on their processes and/or equipment	✓ Capable of converting ideas to new producst no time spent creating ideas.	✓ Time spent to create new ideas, develop products, and innovate processes or products
Imitation/Replication Capability A firm's imitation capability is the firm's ability to use their knowledge about competitors in order to react quickly, copying the advantages in processes or products of actual competitors, or from firms belonging to related or different industries	✓ No ability to produce what others can	✓ Ability to imitate simple products	✓ Ability to imitate any products	✓ Ability to imitate any products before competitors

Marketing and Sales Capability Marketing capabilities reflect human capital, social capital and the cognition of managers involved in the creation, use and integration of market knowledge and marketing resources in order to match and create market and technological change	✓ No marketing activities ✓ No market knowledge	✓ Very basic marketing activities ✓ Basic market knowledge	✓ Marketing strategy and activities based on this strategy ✓ Deep market knowledge	✓ Revise or develop new marketing strategy to enter new markets. ✓ Can create a new market ✓ Can change the market
Decision-making Capability	✓ No systematic decision-making procedures	✓ Decisions made by owner; unable to explain the reasons behind decisions	✓ Can explain the reasons behind decisions.	✓ Use of decision-making tools and techniques to understand and show reasons, causes and outcomes

6.1.2 Validation of Maturity Model

It is essential to create an objective maturity model for validation of research. Thus, the maturity model was developed not only by me but also three academicians and two practitioners. The people involved in the development were chosen based on their academic or job background. It was essential to involve people with knowledge about micro enterprises and/or capability development processes. People involved with the development process included:

- A professor of performance management
- An associate professor of industrial engineering
- A PhD of strategic management
- An industrial engineer who works as a process development engineer in an international manufacturing company
- A project manager who works at the Chamber of Commerce and Industry in Turkey

A draft of the maturity model was sent to all participants to obtain their opinions. After all feedbacks were collected, a final version of the maturity model was developed. In this chapter, the final version of the maturity model is represented. The first version is attached to the appendix.

It is essential to validate the maturity model before it is used. In literature, there are different validation strategies such as considering the best practises and benchmark the firm capabilities, or getting expert views and develop maturity models. It may be difficult to find best practises in twelve different organisational capability areas in one micro enterprise. In this research, the maturity model is developed and validated by experts with different backgrounds. Experts are chosen based on criteria, which are explained above. Five experts from academicians and practitioners are chosen as they have expertise on capability development and/or organisational capabilities. The greater the number of experts the greater the reliability of the maturity model. In this case it was found that after 5 interviews a saturation point was reached. That is, the fourth and fifth expert just confirmed what the others said with no additional contribution. Also, the purpose of the maturity model developed for this research is to enable researcher to observe improvements and changes after implementation of interventions at maturity levels of organisational capabilities. At this point, the maturity model is effective and suitable for its purpose. Researcher is aware of the limitation of the maturity model as it

might be subjective based on expert views but the maturity model is used as a measurement tool in this research and it was sufficient.

6.2 Summary

In this chapter, a capability assessment maturity model was developed to assess maturity levels of organisational capabilities in micro enterprises. This instrument is used as a measurement tool as well as a leading guide for intervention design.

7 DATA ANALYSIS

Two different data analysis methods are used to answer the research questions. Firstly, within-case analysis is used to understand the development of organisational capabilities in each case, and how interventions contribute to those capabilities. Secondly, a cross-case analysis is conducted to compare firms, and identify the reasons behind differences between firms.

7.1 Case A

Firm A is a local furniture producer of 50 years' standing. The firm was founded by two friends and their sons currently manage the firm. Both families have half rights of all firm assets. Their production site is located in a furniture industrial area and the showroom is located in the city centre of Trabzon. They produce classic, modern and customised furniture as seen in Figure 7.1. There is one part-time and seven full-time employees. This is a business to customer type business.

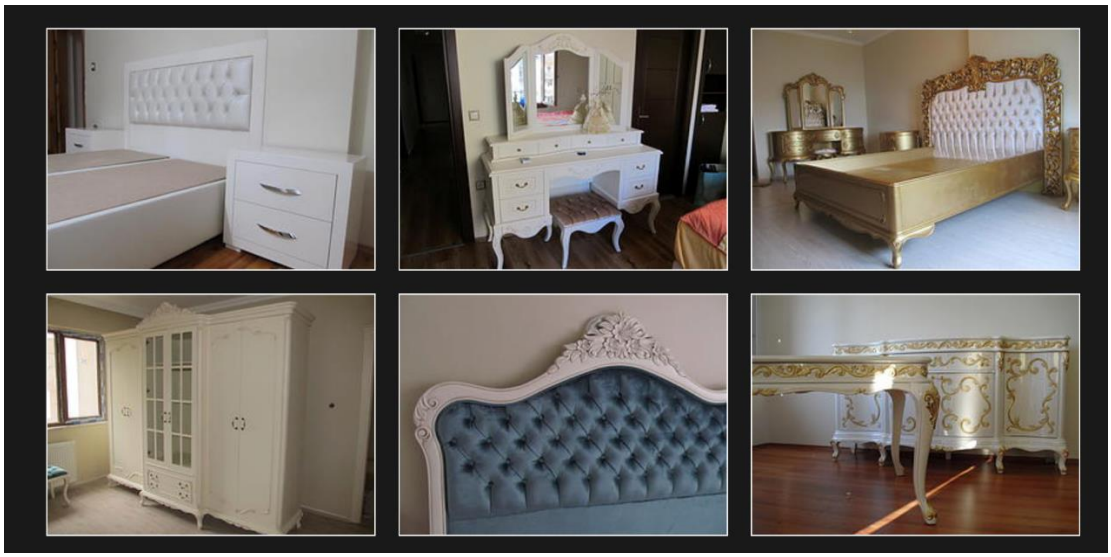

Figure 7.1 Product examples of firm A

7.1.1 Maturity Assessment of Firm A

Maturity assessments were conducted first in June 2014 and finally in May 2015. Table 7.1 compares the changes in capabilities before and after intervention. While some interventions were implemented and contribute to the development of certain capabilities, others have been partially or not implemented. Table 7.1 represents the maturity assessment of firm A.

Table 7.1 Maturity assessment of firm A

Capabilities	**Capability Maturity Level**				**Interventions**									**Explanation**
					I	PI	I	I	PI	PI	I	PI	PI	
Foundation Level Capabilities	Basic	Intermediate	Advanced	Leading	CI Training	5S Training	Developing Strategy	Changing organisation structure	Developing Collaboration	Customer engagement	Establishing Website	Showroom improvement	Products Catalogue	
Culture		**XX**												
Participative Culture	X →				+	+		+						Employees share their ideas more than before.
Empowerment	X →	→						++						Manager delegated his authority.
Learning	X				+	+	+		+					An improvement trend is observed.
Operational Capabilities														
Strategy Development and implementation		**XX**												
Strategy development	X →	→					++							They defined their strategy.
Strategy implementation	X →						++							They started to implement their strategy as well.
Continuous Improvement		**XX**												
5S	X →	→			+	++								Standard places identified for shared equipment. Standard check lists are prepared

															for preparation of installation process.
	Visual Management	X				+									Not used.
	Standardisation	X	→			+									Operation manager is monitoring other employees and check quality of products.
	Problem Solving	X	→			+									More people are involved with problem solving activities. However, there is still not a methodological implementation.
	SMED	X													There are no SMED activities.
Dynamic Capabilities															
Networking and Collaboration Capability		X	→						+	++					Owner started to visit his friend's businesses. Spend time to find good collaboration opportunities.
Environment-Scanning Capability		X	→						++	+	+				Owner is visiting local big furniture showrooms to understand trends in the marketplace. But there remain improvement opportunities. If they can hire someone for the showroom, he can have more time to attend EXPOs.
Innovation and Product Development Capability			X							+	+				They are able to respond to customer needs. No observable change.
Imitation/Replication Capability				X											No observable change.
Reconfiguration Capability		X													Not applicable.
Marketing and Sales Capability		X	→					+		+	+	++	+	++	They have increased their sales. They are using different channels to access more and more customers.
Decision-making Capability		X						++							Operations manager has power for some decisions. But still no observable improvement.

7.1.2 Within Case Analysis – RQ4 and RQ5

As the final diagnostic shows there have been improvements in certain capabilities. In this section, how interventions affect their capability development by within case analysis will be discussed.

Learning capability is identified at a basic level in the first diagnostic. Some interventions encouraged individual learning within the firm. These interventions are CI and 5S training, developing collaboration with other businesses and developing customer engagement. During CI training, responses were elicited such as *"I know that", "we could do that"* and *"I do not do it because nobody does"*. After this training, the number of forgotten tools and items for furniture installation reduced, employees started to ask for more help from each other and they stopped hiding their small mistakes. Furthermore, customer engagement enabled the firm to learn new trends in the furniture industry. The manager explained *"our customers request a new product with a picture which is from big companies' product catalogue. This is a good way to learn new trends at the industry".* In addition, developing collaboration with other businesses or government support organisations has a positive impact on learning capability. In a conversation, the manager expressed that *"we learn from other businesses as well. Our most experienced employees left 10 years ago and they found their own furniture firm. We provide them some tools and equipment and they help us assemble some complex models and train our employees for future production"*. As a result, these interventions had a positive influence on development of learning capability at the firm. It can be suggested that CI, 5S, developing collaboration with other businesses, developing customer engagement processes can contribute to the development of learning capability and micro enterprises can implement these interventions with low cost and short training. On the other hand, capabilities evolve together and empowerment has a positive influence on learning capability. The manager explained *"My most experienced employee was not fully focused on any development in the industry. I was telling and encouraging him to learn new things but he changed significantly after he got a promotion as an operations manager. He is the one suggesting I attend training and EXPOs with other employees".* I also observed that he has spent more time with other employees to share his experience and teach them how they can perform better.

Employee participation was identified as very low during the first diagnostic; it increased after implementation of certain interventions such as organisation structure change, 5S and CI training. The new operations manager highlighted *"I was able to talk with our manager but it was more about confirming and supporting his ideas. After my position changed in the firm, I began to share my own ideas and discuss with the owner about possible solutions to our problems. I also believe that changing my position increased the motivation of my young colleagues."* Conversely, the manager also supported the operations manager by explaining *"I observed that he is more interested with strategic activities after he became operations manager. He brings new furniture ideas and equipment that we can use to create different types of products."* Both the operations manager and owner state that changing the organisation structure had a positive influence on employee participation. Furthermore, 5S and CI training encouraged employees to share their ideas with the owner and operations manager. The operation manager commented that *"In those trainings, as you emphasised that if customers realised a mistake that you were hiding it can cost more than if you share and fix it before the product reaches the customer. Thus, they do not hide small mistakes and we fix them before they reach the customers. Also good ideas are coming from employees such as last month one of them saw a machine on the internet and showed us a video that can increase our production capability. The owner is looking for a funding opportunity to buy a similar machine".* I also observed that employees shared more knowledge with each other during the working day. As a result, changing organisational structure, 5S and CI training contribute to the development of employee participation. It can be suggested that encouraging idea sharing and delegation of authority contribute to employee participation in micro enterprises. In addition, some capabilities also help the development of employee participation in micro enterprises. Learning is a core routine for capability development, also empowerment has a positive influence on employee participation. As noted in the managers` statements above, after delegation of owner authority with employees, they began to share more ideas with the owner and each other. Thus, it can be suggested that empowerment and learning capabilities have a positive impact on the development of employee participation.

Empowerment was also an unsolved issue identified in the first diagnostic. Thus, the organisation structure was redefined for this firm. The owner was very busy with

operational activities to the extent that he was not able to open the showroom in the mornings. Thus, the most experienced employee was promoted to operations manager. After this change in organisation structure, the owner highlighted *"I had a few doubts about whether he can manage other employees, etc., but I see that everyone is happy and motivated. This change created enough time for me to spend on marketing activities. I am also thinking to hire a sales person to spend more time outside the showroom so I can find more ways to bring new customers into the business".* It is also observed that the owner spends more time in the showroom, they communicate with the operations manager via phone and every Saturday they have meetings about the previous week and next week's production plan. As a result, it can be suggested that empowerment can be solved by defining the organisation structure and delegating authority equally. Additionally, high employee participation encouraged the owner to share more authority with employees. mentioned above, the owner pronounced "*...I am also thinking to hire a sales person to spend more time outside the showroom so I can find more ways to bring new customers into the business*." The owner observed the positive influence of sharing authority. Thus, he is willing to share more of his responsibilities in order to focus on more strategic activities. Consequently, it can be suggested that employee participation and empowerment evolve together.

Continuous improvement activities did not exist in the firm. Thus, continuous improvement and 5S training are given to employees. The operations manager explains that "*Our fathers – founders of the firm – were more careful about waste as they were poor but I guess we do not care as much as them. Thus, these trainings were timely to teach them how to identify waste in our processes and one of the employee suggested to make a check list for furniture installation processes so they would not forget any tools"*. In addition, the operations manager highlighted "*we were keeping our own working areas tidy and clean but it was always hard to find shared equipment. Thus, 5S training enables us to define areas for shared equipment so everyone can find them quickly and put it back for other employees*". It was also observed that employees are motivated to do their job better. Consequently, CI and 5S training – low cost, applicable and not complex for employees – have a positive impact on the development of a continuous improvement capability. On the other hand, certain capabilities have direct relationships with development of continuous improvement capability such as empowerment and employee participation. It is observed that after creating the

operations manager position, the new operations manager was more motivated to improve day-to-day activities and by sharing x`s authority with him the owner creates a positive impact on this motivation. In addition, as stated above, employees care more about the company`s problems and they are motivated to solve day-to-day problems in return for recognition. As a result, it can be suggested that empowerment and employee participation contribute to the development of the continuous improvement capability in micro enterprises.

Strategy development and implementation capability was identified as immature in the first diagnostic. The owner was not able to define their operational and/or marketing strategies. This also caused problems for the firm. The owner and employees were not able to prioritise jobs and events. Strategy development intervention was designed to teach how they can develop a strategy and implement it. The owner stated that *"employees were hiding their small mistakes but customers were calling us after the installation process for even a small dot on the furniture. In this situation, there is a repair cost but more importantly our customers are usually our neighbours or relatives or a friend of someone who already purchased from us and if he or she is not happy with the service and product, we would have a bad reputation and lose potential customers. Thus, we explained to our employees not to hide any mistakes from us. Everyone knows that our first priority is producing high quality furniture."* Furthermore, the owner/manager shared their strategy with all the employees and all employees understand their personal priorities. Developing a strategy and sharing this with their employees helps to develop implementation of new strategies and enable all employees to focus on the same targets. Currently, they have operational strategies to reduce their cost and increase customer satisfaction. Moreover, they follow a marketing strategy to increase their customer base. Employees know the most important aspects for the company. As a result, strategy development and implementation capability can evolve by learning how to develop a strategy and implement it. On the other hand, certain capabilities are substantial for development of strategy development and implementation capability such as learning and empowerment. Learning is a core routine for all capabilities to be built over time and learning strategy development is crucial for firms. Solving empowerment issues firstly, enables owners to create slack time for strategic activities to develop a strategy. *"Why you do not focus on this issue?"* type questions always elicited a similar response from the owner *"I know but I do not*

have time for it". He was busy with day-to-day activities. Secondly, implementing strategies became easier after the operations manager was able to monitor employees. The owner also explained difficulties to implement something in the operation as *"I am not with them all the time. I cannot really follow them all the time"*. He was actually aware of problem but not providing a solution to change it. Thus, it can be concluded that development of the empowerment capability contributes to strategy development and implementation capability.

Networking and collaboration capability were identified as immature in the first diagnostic. Although the owner has a very wide network, he does not really like to use it and was not able to find time. Certain interventions are designed to improve networking and collaboration capability such as developing collaboration with other businesses and GSOs (Government Support Organisations), and organisation structure change. Organisation structure change created slack time for the owner to focus on strategic activities to develop good business relationships with other businesses and GSOs. The owner explained new situation *"As a family, we have many friends who have their businesses but we never ask them to collaborate to increase our sales or share customers. After deciding to collaborate with them, I have visited some business owners to discuss how can we share our customers or direct each other? Eventually, we decided to give promotion cards; when purchasing from other businesses customers can receive 5-10% discount on our products and the same for our customers who purchased from us can receive discount from agreed companies. In the last few months this collaboration helped us to make some extra sales."* This is not only a benefit of collaboration for the firm. They also collaborate with other manufacturers. The operation manager stated that *"We have an advantage that our production site is inside the furniture producing area so there are other producers. When one of our friends produce something different or use a new material or equipment, we can also learn from their experiences by visiting their production or even talking at tea time."* It is obvious that micro enterprises can benefit from a well-developed networking and collaboration capability. As a result, it can be suggested that changing organisation structure to create slack time for the owner, and developing collaboration with other businesses and GSOs, can develop the networking and collaboration capability in micro enterprises. Additionally, certain capabilities have a positive influence on the development of networking and collaboration capability such as learning, empowerment

and environment-scanning capabilities. As the owner stated above, he was not able to find any time for strategic activities before empowerment issues were solved; subsequently, he began to find more time for strategic activities such as visiting other businesses to collaborate, and attending sectorial meetings. Thus, development of the empowerment capability contributes to the development of networking and collaboration capabilities. Furthermore, finding possible business, which can be a partner – to support production, marketing, or product development – is important for development of networking and collaboration capability. The manager states that *"I spend more time to find possible partnerships with any of my friends` businesses or friends of my friends` business. The last few months, the operations manager also suggested a few businesses to contact for reducing our supplies with less cost".* Thus, an environment-scanning capability also has a positive impact on development of the networking and collaboration capability. As a result, learning, empowerment, and environment-scanning capabilities contribute to the development of networking and collaboration capabilities.

Decision-making capability was also identified as immature in the first diagnostic. The owner explained their decision-making process as follows: *"This firm was founded by my father and my father-in-law and all decisions were made together by discussing between all stakeholders since the first day of the firm. Today, this process is too long due to the increased number of stakeholders".* An intervention is designed to contribute to the development of the decision-making process for all levels of the organisation. Strategy development and defining priorities were suggested to the owner. The operation manager stated the change as *"When they made a mistake, they were trying to look for a solution to hide it. However, our customers usually check their furniture after installation and if they realised any mistake, they usually complained about the mistake to the owner and asked for a repair. After defining our operational goals and priorities, it is emphasised to everyone that quality is the most important thing in our operation; we should deliver all our orders hassle-free. Thus, employees were encouraged to share any mistakes because some of them are young and still need to learn many things. They all know the priorities in production and it helps them to make the right decisions."* Furthermore, the owner highlighted *"Making a decision is really hard for me. For example, I was trying to sell a machine, which we do not usually use it and it is also old technology now but my father and father-in-law are against selling any machines. They*

have an old generation mind and claim that we might use it again. However, after defining our operational – using layout more effective, we sold the machine and created a new working area." It is obvious that in many micro enterprises, there are not many stakeholders; nevertheless, making decisions might be a challenge. Thus, it can be suggested that micro enterprises should have defined goals and strategies for operations to contribute to the development of the decision-making capability. addition, learning, and strategy development and implementation capabilities have a positive effect on the evolution of decision-making capability in micro enterprises. Learning is a core routine as explained earlier. Strategy development and implementation capability also has a huge impact on the decision-making capability. It is observed that, at first, there was no defined strategy at the firm and decisions were made based on discussions between stakeholders. Thus, sometimes decisions conflicted. Thus, it can be suggested that strategy development and implementation capability can contribute to the development of the decision-making capability.

Marketing and sales capability was identified as immature in the first diagnostic. The manager was spending half of his day at the showroom (afternoons) and awaiting customers without spending any effort to attract new customers. Low sales caused the owner to close the business after 45 years. Thus, interventions to develop the marketing and sales capabilities were vital for this firm such as developing a marketing strategy and, based on this strategy, some actions were designed such as developing collaboration with other businesses, establishing a website, preparing a product catalogue, customer engagement and showroom improvement. These interventions helped increase their sales for the last six months. The manager explained *"I understand that there are more customers whose attention we can attract. I did not believe that brochures and a website would help us to sell more products but I realised I was wrong within two months. I asked my friends, who have businesses, to give a brochure to each of their customers and many new customers came and visited our showroom. Also, I collected many product catalogues of big furniture companies to show customers that we can also produce those products if they wish. Moreover, we started to ask our customers after installing a piece of furniture to take some photographs so when a new customer visited our showroom, we can show them how our furniture looks after installation. These changes helped us to increase our sales".* Furthermore, it is observed that the owner now thinks more strategically than operationally. He is more

marketing-oriented and tries to find new ways to find more customers. As a result, it can be suggested that developing a marketing strategy includes some actions such as developing collaboration with other businesses, promotion, and using social networks; furthermore, internet-type actions contribute to the development of marketing and sales capability. Moreover, certain types of capabilities also contribute to the development of marketing and sales capabilities such as empowerment, strategy development and implementation, innovation and product development, networking and collaboration, and imitation capabilities. It is observed that after solving the empowerment issue, the owner had more time to spend on strategic activities and this had a positive impact on the marketing and sales capability. Furthermore, they began to learn how to develop a strategy to improve business performance by strategy development and implementation capability and this also helped them to implement actions promoting marketing and sales. Also, the owner stated that *"We need to produce products that are fashionable and on trend. Every day, big companies produce new products and we cannot compete with them in designing new furniture. Thus, we imitate their products when customers ask or we believe a product that can be sold."* Through this statement, the owner emphasised the importance of innovation and product development and imitation capabilities for development of marketing and sales capability. Moreover, networking and collaboration activities enabled the owner to find new channels to access different customers. Thus, development of networking and collaboration capabilities contributes to the development of marketing and sales capability. As a result, it can be suggested that empowerment, strategy development and implementation, innovation and product development, networking and collaboration, and imitation capabilities contribute to the development of marketing and sales capability in micro enterprises.

Innovation and product development capability`s maturity level was identified at the intermediate point of the first diagnostic. Certain interventions are designed to contribute to the development of innovation and product development capability such as developing collaboration with other businesses and GSOs, and developing customer engagement interventions. The owner explained that *"Our customers scan different sources to find the best choice for their home. Thus, they can bring new types of furniture. For example, we produced our first modular teenage room based on a customer's needs. It was difficult for us to find assembly materials at first but we succeeded to deliver it on time as requested. Then, I began to offer modular furniture to*

new customers. Thus, understanding our customers' requests is really important for us. Moreover, our collaborative friends also helped us to learn a new trend or technology. In addition, it is important to collaborate with other producers to increase our production capacity and capability. For example, we were using an old machine to glue the sides of cabinet doors. This material was parting based on customer use and big companies were offering better doors without any glued components to them. We collaborated with a big producer to outsource cabinet doors. This way, we improved our products." The owner emphasised the importance of understanding customer needs and customer engagement intervention enabled the firm to create a database and knowledge concerning their customers. Furthermore, some previous examples also prove that collaborating with other businesses contributes to their products' quality. As a result, it can be suggested that developing customer engagement and collaborating with other businesses and GSOs contribute to the development of innovation and product development capability. Additionally, certain capabilities such as learning, environment-scanning, and networking and collaboration capabilities also have an impact on the development of innovation and product development capability. The owner emphasised the role of scanning for innovation and product development capability as "*I am looking for product catalogues and visiting EXPOs to create our product models. It is not only imitation of their products. We also made some changes or combined two different models to create a new one."* As the owner identified, finding new trends in the industry is important to create new products. Thus, environment-scanning capability has a positive effect on the development of innovation and product development capability. Furthermore, networking and collaboration capability also has a positive effect on the development of innovation and product development capability. It is observed that they outsource some production processes for various reasons. At this point, they need to collaborate with other businesses otherwise they cannot produce those designed products. As a result, it can be suggested that learning, environment-scanning, and networking and collaboration capability contribute to the development of innovation and product development capability in micro enterprises.

Environment-scanning capability was identified as undeveloped in the first diagnostic. Some interventions are designed to increase the maturity level of environment-scanning capability such as organisation structure change and developing collaboration with other businesses' intervention. The owner stated that *"after I delegate my responsibilities to*

the operations manager I had more time to visit other businesses or research new products, technologies or new business ideas. Also, developing collaboration with other businesses helps us to find new ideas. For example, one of our friends had bought a machine with government support and we are preparing an application form to receive some funds as well." It is observed that the manager/owner could not find slack time for scanning activities. Moreover, some examples proved that they learn new technologies, funding opportunities, etc., from their networks and business partners. Consequently, the environment-scanning capability can be developed to create slack time for scanning by delegating manager responsibilities; and collaborating with other businesses can help organisations to learn about new technologies or funding opportunities. Moreover, certain capabilities also contribute to the development of environment-scanning capability such as learning, employee participation, empowerment, and networking and collaboration capabilities. It is observed that employees were not involved in any scanning activities. However, after empowerment issues were solved, all employees began to bring new ideas – especially the operations manager. Furthermore, it is also observed that the owner had more slack time after empowerment issues were solved. Thus, it can be stated that employee participation and empowerment capabilities contribute to the development of environment-scanning capability. Moreover, the owner`s statement "*…developing collaboration with other businesses helps us to find new ideas…"* proves that networking and collaboration capability enable the firm to identify new ideas and threats. As a result, it can be stated that employee participation, empowerment, and networking and collaboration capability enable micro enterprises to improve their environment-scanning capability.

Imitation/replication capability was identified as an advanced maturity level at the first diagnostic. As it is a developed capability of the firm, no intervention was designed. However, it is observed that certain capabilities have a positive impact on the development of imitation capability such as learning, continuous improvement and environment-scanning capability. Cost is an important criteria for customers and the firm does not compete on cost. However, it is still important that when a customer came with a product picture to ask for a price, firm needs to be able to offer a good price. The owner stated that *"I have lost many customers because we could not offer them an acceptable price. Thus, I knew that we should minimise our production cost. CI and 5S training changed employees` mind-sets and they consider unnecessary movement (such*

as visiting the same customer twice in a day because they forget a piece or tool for furniture installation). If I can reduce the production cost of the first product, I know I can sell more new imitated products." As the owner statement proves, they are aware of production cost affecting their imitation capability. It can be suggested that improvement of the continuous improvement capability has a positive impact on development of the imitation capability. Furthermore, finding possible products that they can produce is also important for development of imitation capability. The owner explained that *"I was the only one who was looking for other firms` products catalogues before all these actions were implemented. However, today, almost everyone brings new product ideas. It also helped us to access more customers by offering them different types of products."* This statement shows that there is a positive relationship between environment-scanning and imitation capabilities. As a result, it can be stated that continuous improvement and environment-scanning capabilities have a positive impact on the development of the imitation capability of micro enterprises.

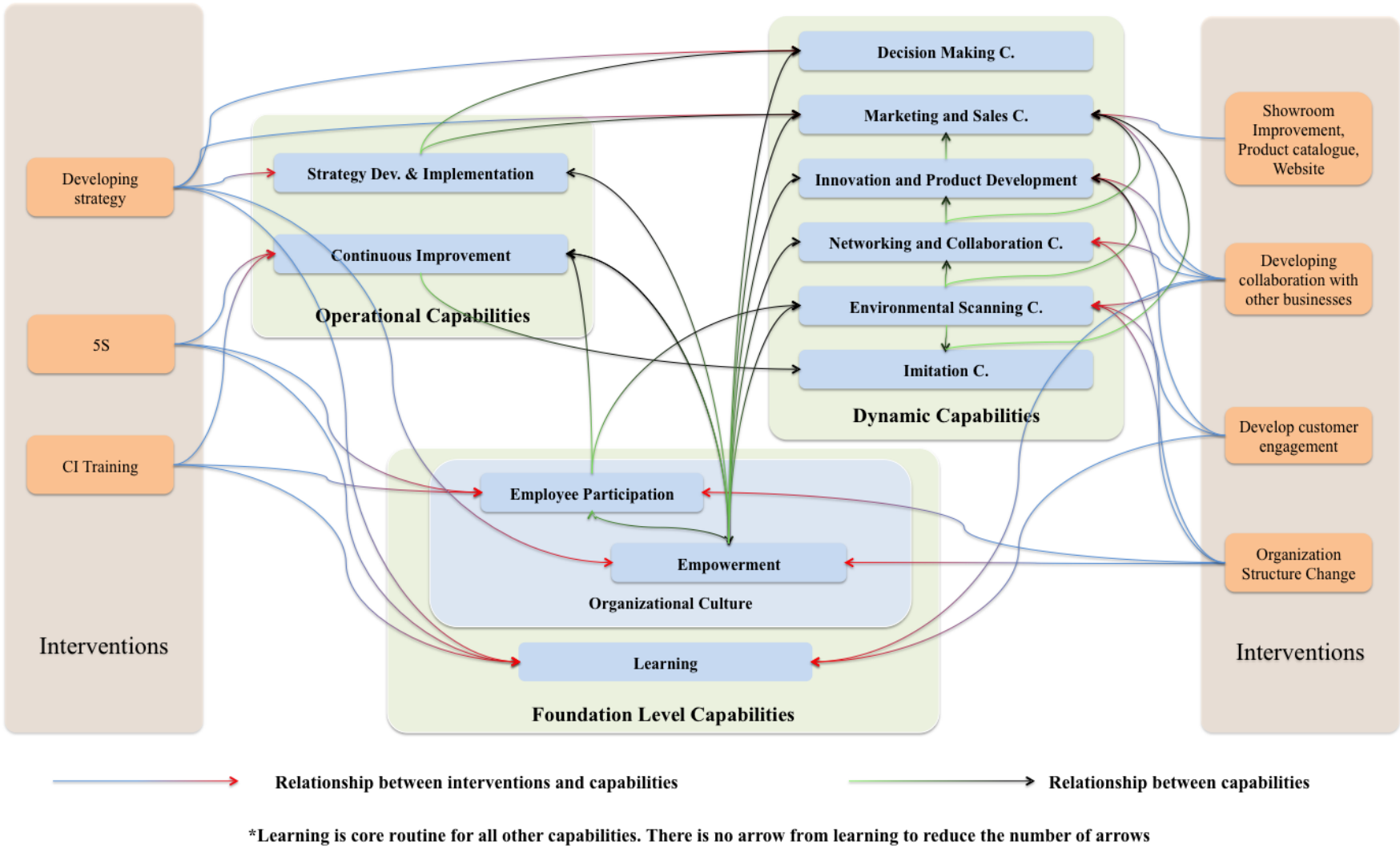

Figure 7.2 Relationships between capabilities and interventions in firm A

Table 7.2 Relationships between capabilities in firm A

	Participative Culture	Empowerment	CI	Strategy D&I C.	Decision-making C.	Innovation & Product Development C.	Environment-scanning C.	Imitation C.	Marketing & Sales C.	Networking & Collaboration C
Learning	++	++	++	++	++	++	++	++	++	++
Participative Culture	NA	+	+				+			
Empowerment	++	NA	+	+	+		+		+	++
CI			NA					+		
Strategy D&I C.				NA	+				+	
Innovation & Product Dev. C.						NA			+	
Environment-scanning C.						+	NA	++		++
Imitation C.								NA	+	
Networking & Collaboration C						+	+		+	NA

7.2 Case B

Firm B was founded to sell accessories for door and window production in 1996 after which they began to produce metal and plastic parts for door and window production in 2001. This is a family firm, shared by two brothers. Their production began with two employees and one injection machine; currently they employ 10 people with more machines. They sell their products in the Northern Black Sea region of Turkey; they are a business-to-business type of business. Some of their products can be seen in Figure 7.3.

Figure 7.3 Product examples of firm B

7.2.1 Maturity Assessment of Firm B

Maturity assessments were conducted first in June 2014 and finally in May 2015. Table 7.3 compares the change in capabilities before and after interventions. While some interventions were implemented and contribute to the development of certain capabilities, others were not or only partially implemented. Table 7.3 represents the maturity assessment of firm B.

Table 7.3 Maturity assessment of firm B

Capabilities	**Capability Maturity Level**				**Interventions**										**Explanation**
					PI	**PI**	**I**	**PI**	**PI**	**PI**	**I**	**PI**	**F**	**PI**	
Foundation Level Capabilities	Basic	Intermediate	Advanced	Leading	SMED	5S	Developing Strategy	Organisation Structure Change	Collaboration with agencies	Suggestions Scheme	Website	New Equipment	Maintenance Program	Developing Customer Engagement	
Culture															
Employee Participation	X					+		+	+	+					There was no observable improvement. Only skilled employees were contributing to improvement.
Empowerment		X →						++							Positions and responsibilities were redefined and employees know their responsibilities. They now have the right to make some basic decisions.
Learning	X				+	+				+					Learning is still limited with few people in the organisation.
Operational Capabilities															
Strategy Development and implementation															
Strategy development	X →						++								They develop their strategy.
Strategy implementation	X →						+								They partly implement their strategy.

Continuous Improvement															
5S	X	→				++									Employees have begun to change their behaviour. They try to put everything in order.
Visual Management	X														No change.
Standardisation	X												(+)		
Problem Solving	X	→								++			(+)		Skilled employees started to solve problems in operations.
SMED	X	→			++										They moved the setup process at the end of shifts.
Dynamic Capabilities															
Networking and Collaboration Capability		X →						+						+	Networking and collaboration activities are important for the owner. He always attends sectorial meetings, visiting universities and government support organisations.
Environment-scanning Capability		X →						+	+	+					Scanning activities were limited to the manager.
Innovation and Product Development Capability		X										++		+	Motivation of their innovation is customer requests; they can respond some.
Imitation/Replication Capability	X														No observable change.
Reconfiguration Capability		X													No observable change.
Marketing and Sales Capability	X	→									++			++	They have established websites, introduced new products, visit more customers and collect some feedback about their product. They also collaborate with some sale agencies to sell their products.
Decision-making Capability		X →													They have started to use boards to follow their short-term goals. Decisions are made based on their strategies and priorities.

7.2.2 Within Case Analysis – RQ4 and RQ5

Learning capability is a core capability for development of all other capabilities and certain interventions had a positive impact on learning capability such as the suggestion scheme and developing the customer relationship. The owner stated that *"Our employees were not exploring any new knowledge except one of them but after suggestion cards were introduced, they all started to force themselves to bring new ideas into the business. This was also our mistake because we never asked them to do anything other than work."* Changing employee behaviours can take time but it is observed that the attitudes of employees have been changed; they are now more open to new ideas, at least in this short time. As a result, it can be suggested that although all interventions contribute to the development of learning capability, the suggestion scheme has had a direct impact on the development of organisational learning capability. Moreover, learning capability is essential for the development of other capabilities; all capabilities also contribute to the development of the learning capability. As the owner states employee participation has a more important role in the development of organisational learning capability. It is also observed that employees change their attitude and involve extra activities such as CI, idea generation, and environment scanning. Thus, it can be concluded that all capabilities contribute to the development of learning capability but employee participation capability plays a substantial role in the development of learning capability.

Employee participation was not developed in this firm. Command and control mechanisms were dominant and this was preventing employees from being involved in different activities such as improvement or idea generation. Some interventions are designed to encourage employees to participate such as 5S and SMED training, a suggestion scheme, and organisation structure change. The owner commented that *"Employees are our relatives or neighbours. Thus, I was thinking they would share their ideas freely with my partners or me. However, I realised that we never asked them to do so. Hence, I observed that employees began to give us new improvement ideas via suggestion cards. For instance, after SMED training, our most experienced employee came and offered to come to work one hour late and leave one hour late so he can change the moulds when the injection machines are free. We made this change and increased the working hours of injection machines with no extra cost."* This statement proves that 5S and SMED training, and suggestion scheme interventions encouraged

employees to become involved in improvement activities by idea generation. In addition, it is observed that defining new positions and redesigning organisation structure motivated employees. For instance, one young employee explained *"Defining the mechanic role as a team leader motivated me to be the next one in future. Thus, I began to develop my skills"* and he is not the only one who is motivated in this way. As a result, it can be suggested that encouraging employees to be involved in improvement activities, and rewarding them, increases employee participation in micro enterprises. Additionally, some capabilities also contribute to the development of employee participation at firm B such as learning and empowerment. Learning capability is a core capability for all capabilities and it is important to learn how to encourage employee participation. As mentioned above, employee participation was promoted by rewarding and motivating employees. It is observed that by delegating more owner authority to employees, they are more motivated to participate in certain activities such as improvement, scanning and idea generating. As a result, it can be stated that improvement at maturity of empowerment contributes to the development of employee participation in micro enterprises.

Empowerment`s maturity level was identified as being at the intermediate level in the first diagnostic. Stakeholders share authority as one (sales manager) is responsible for sales activities, one (production manager) is responsible for production to monitor and manage employees, and the last person is at general manager position. Although the maturity level of empowerment is higher in this firm than other cases, employees are monitored and controlled by stakeholders. Thus, an intervention is designed to improve empowerment such as redefining the organisational roles of employees and changing the organisation structure. In the new organisation structure the production manager shared some day-to-day activities with a mechanic and experienced employees. Now, these employees can order O2 from the supplier before it finishes without asking permission. This helped them to supply O2 quicker and reduced the risk of lack of O2. As a result, it can be stated that changing organisational structure and redefining responsibilities for each employee contributes to the improvement of the empowerment capability. On the other hand, certain capabilities also contribute to the development of empowerment capability such as learning and employee participation capabilities. The manager highlights that *"we would like to give our employees more responsibilities but they are not willing to take it."* As he explains, it is also observed that the mechanic has

more responsibilities than any other employee as he is open to learning and willing to take more responsibilities. As a result, it can be suggested that employee participation enables managers to delegate their authority.

Continuous improvement activities were basic at the firm. Thus, some interventions were designed to develop a continuous improvement capability such as maintenance a programme, 5S and SMED training, and a suggestion scheme. The owner felt that *"after introducing 5S, SMED and a suggestion scheme, employees began to suggest ideas to improve their current work. For example, after 5S implementation, you cannot see any tools on the floor anymore. They try to keep their working environment clean and all equipment is in its allocated place. In addition, the changing mould process is time consuming and this time is important because we are not able to produce anything. Thus, a small change to our employee's working time helped us to run an eight hours' production. We still need to improve changeovers as sometimes we have faulty moulds. Moreover, even though our employees share their ideas via idea cards, there are very few valuable ideas and I cannot expect too much from them as there is only one college graduate and one high school graduate*". It is also observed that employees are more open to new ideas. For instance, the maintenance programme has been created and the mechanic began to record all maintenance activities to plan the next preventive maintenance. He says that *"I was only responsible to fix any breakdown after it happened. This maintenance programme allows me to fix a problem before it occurs".* An improvement trend is observed in operation productivity after implementation of CI interventions. As a result, it can be stated that 5S, SMED and the suggestion scheme interventions have had a positive impact on the development of a continuous improvement capability. In addition, some capabilities also contribute to the development of continuous improvement capability such as learning and employee participation. There is an obvious difference in employee antidotes before and after interventions. Employees are encouraged to contribute to the development of the current working environment and this contributes to development of a continuous improvement capability. Hence, it can be suggested that employee participation capability promotes development of a continuous improvement capability in micro firms.

Strategy development and implementation capability was identified at a basic maturity level in the first diagnostic. There was no developed strategy in the firm. Thus, some

interventions were designed to improve strategy development and implementation capability such as management coaching about strategy development and implementation. In a meeting, different types of strategies were suggested to the manager. For instance, the firm faces long lead-times and high WIPs. Thus, focusing on operation productivity is defined as the first priority. After this meeting, the owner shared their strategy with employees to lead them to the same targets. These actions helped them to create operational level strategies and improve operation performance. Hence, it can be concluded that teaching managers/owners how to develop strategy contributes to the improvement of strategy development and implementation capability. In addition, certain capabilities also contribute to strategy development and implementation capability such as learning and employee participation. Learning how to develop and implement a strategy is essential. Thus, individual and organisational learning capability has a vital role as a core capability. On the other hand, it is observed that resilience against change was less than before due to interventions and employees were more open to new ideas. This enabled the owner to implement new strategies easier than before. As a result, it can be stated that learning and employee participation capabilities have a positive impact on the development of strategy development and implementation capability.

Decision-making capability was identified at an intermediate maturity level in the first diagnostic. Stakeholders make important decisions together but basic level decisions may take longer, especially for employees. Employees need approval from managers for basic day-to-day decisions. Thus, some interventions had a positive impact on the decision-making capability such as developing strategy and organisational structure change. Operational priorities were defined as *"reducing cost and increasing quality"* and employees have a responsibility to make day-to-day decisions. The owner emphasises that *"the number of calls that I receive from my workers reduced almost 50%. I can focus on my daily tasks and spend more time on collecting information for difficult decisions."* This statement proves that decision-making capability has an improvement trend in the firm because of strategy development and organisational structure change interventions. As a result, it can be concluded that developing strategies and redesigning organisation structure contribute to the development of decision-making capability. On the other hand, certain capabilities influencing the development of decision-making capability are identified such as empowerment, and

strategy development and implementation capabilities. Strategy development and delegating authority interventions are identified as contributors of decision-making capability. Hence, it can be suggested that empowerment, and strategy development and implementation capabilities have a positive impact on decision-making capability.

Environment-scanning capability was identified at an intermediate maturity level in the first diagnostic. The manager was scanning new opportunities and threats and his efforts were not enough for firm. Thus, some interventions were designed to increase scanning activities in the firm such as a suggestion scheme, redesigning the organisation structure, and developing collaboration with other businesses and government organisations. The suggestion scheme intervention encouraged employees to search new ideas that can be beneficial for their work. For instance, one employee explains that *"... While I was searching a process on Google, I saw a machine that could do my job faster and better. I suggested purchasing that machine so we can increase our capacity and quality of product".* The manager confirmed this and also said that *"searching for funding and/or if we can produce a similar machine with our employees".* Furthermore, the owner stated that their network provides them with helpful information such as funding, new markets, and new product opportunities. Thus, developing good relationships with other businesses and organisations contributes to the development of environment-scanning capability. Moreover, the manager says that *"Searching is important for us and I was the only one in the firm. However, I was not able to find enough time for it. After defining roles and giving some extra roles to employees, I have fewer calls from employees. This enables me to spend more time for different scanning activities such as attending sectorial meetings, visiting customers and other businesses."* After the implementation of interventions, an improvement trend was observed in the environment-scanning capability. Thus, it can be concluded that encouraging idea generation, creating slack time for the owner by sharing the responsibilities of day-to-day activities with employees, and developing good relationships with other businesses and government organisations contribute to the development of environment-scanning capability in micro enterprises. Furthermore, certain capabilities have a positive impact on the development of environment-scanning capability such as learning, employee participation, empowerment, and networking and collaboration capabilities. It is observed that employee participation has increased at the firm and they bring new ideas as well. As mentioned above, employees also search new

ideas to suggest with suggestion cards. Furthermore, sharing managers` authority with employees enabled managers to find more slack time for scanning activities. In addition, the manager mentioned the importance of their network to find new opportunities such as funding from government for purchasing new equipment, and collaborating with trade organisations to sell their product abroad. As a result, it can be suggested that learning, empowerment, employee participation, and networking and collaboration capabilities contribute to the development of environment-scanning capability.

Innovation and product development capability was identified at an intermediate maturity level in the first diagnostic. *The* firm tries to introduce new products every two years. Some interventions are designed to improve innovation and product development capability such as developing customer engagement, and purchasing new machines and equipment. The manager explained that *"Our customers` desires and requests force us to develop new products. For example, door mechanisms were on the right or left side and our customers were ordering two different products. We produced the first double-sided door mechanism so our customers can use our new product for both right- or left-sided doors. Moreover, we improved our machinery capacity by purchasing new machines with government support. In this way, we can produce new products and increase our product range. For instance, we bought a new machine to produce part of a latch."* The owner's statement supports that if they can identify different customer needs, they can produce new products. Moreover, as the owner indicated, they can improve their production capability by purchasing new machines. Hence, it can be concluded that developing customer relationships to understand their different needs and improving the equipment pool can contribute to the development of innovation and product development capability. On the other hand, certain capabilities have a positive impact on the development of innovation and product development capability such as learning, networking and collaboration, and environment-scanning capabilities. The development of networking and collaboration capability enabled this firm to find new markets, funding opportunities, and new product ideas. For instance, most of the machines have labels to showing the support organisation that funded the machine. In this way, the firm has increased their product range over the last 10 years. Moreover, the owner highlighted that *"it is important to find new product ideas. Sometimes our customers bring us products that we can produce but never saw before. Thus, I am*

trying to scan industrial magazines and attending expos but big companies introduce new products and it is really hard to sense it quickly." This statement emphasises the importance of environment-scanning for innovation and product development capability. As a result, it can be suggested that learning, networking and collaboration, and environment-scanning capabilities promote development of innovation and product development capability in micro enterprises.

Marketing and sales capability was not developed at the firm. Their strategy was simply waiting for customers to visit their showroom. Thus, some interventions were designed to improve the marketing and sales capability such as establishing a website, developing customer relationships and a marketing strategy. The firm established a website to represent their products online and they are now more visible. New customers can find them online. After establishing website, several new customers found them online and contacted them within a short period. Moreover, owner explained that *"our customers are also producers. Thus, their references are important to find new customers for us."* Developing good customer relationships is vital to create loyalty and find new customers for this firm and the owner's statement supports this. Hence, it can be suggested that establishing a website, developing customer relationships and a marketing strategy improve the marketing and sales capability in micro enterprises. Moreover, certain capabilities promote the marketing and sales capability in the firm such as learning, innovation and product development, and networking and collaboration capabilities. The owner articulated that *"Our customers are purchasing many products from us but if we could improve our product range, they would also buy those from us. Moreover, some of our old customers chose a different supplier to buy all their needs from the same supplier. It costs us to lose our customers as well."* The product range has an important role in marketing and sales. Thus, it is obvious that innovation and product development capability has an influence on the marketing and sales capability. In addition, it is identified that their network and the firms with whom they collaborate bring them new customers. The owner explained this as *"we have good relations with our environment and collaborate with traders to find new customers. Eventually, I can say that 20% of my customers are from my relatives, friends and traders."* As a result, it can be concluded that learning, innovation and product development, and networking and collaboration capabilities has a positive impact on the development of marketing and sales capabilities.

Networking and collaboration capability was identified at the intermediate maturity level in the first diagnostic. The owner is aware of using their network to find new customers, and funding opportunities but there remains an improvement opportunity. Developing collaboration with other businesses and government organisations is designed to improve networking and collaboration capability. It is observed that the owner spends more time attending sectorial meetings, expos and visiting government support organisations. He is learning to improve relations with other organisations. Hence, it can be suggested that learning how to develop collaboration with other businesses and organisations contributes to the development of networking and collaboration capability. Furthermore, certain capabilities contribute to the development of networking and collaboration capability such as learning, and environment-scanning capability. The owner stated that *"Finding firms that we can work together with is a challenge for us. We need to collect sufficient information about the firm before we make a partnership. We had bad experiences that cost us a lot." The* owner's statement proves the positive relationship between the environment-scanning capability, and networking and collaboration capability. As a result, it can be suggested that learning and environment-scanning capabilities contribute to the development of networking and collaboration capability in micro enterprises.

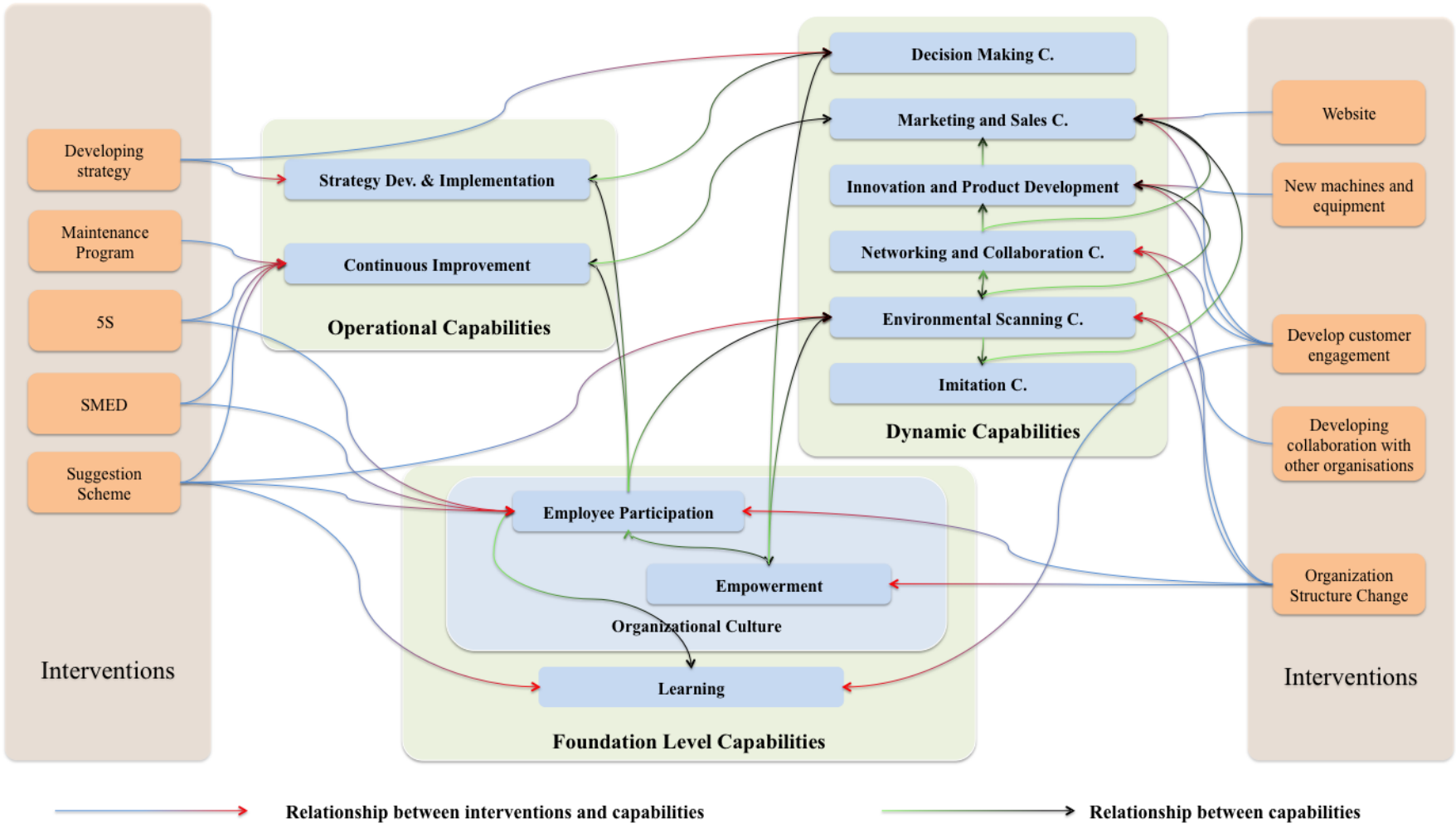

Figure 7.4 relationships between capabilities and interventions in firm B

Table 7.4 Relationships between capabilities in firm B

	Learning	Participative Culture	Empowerment	CI	Strategy D&I	Decision-making C.	Imitation C.	Networking & Collaboration C	Innovation & Product Development C.	Environment-scanning C.	Marketing & Sales C.
Learning		++	++	++	++	++	++	++	++	++	++
Participative Culture	++		+	++	+					++	
Empowerment		+				+				+	
CI											+
Strategy D&I						++					
Innovation & Product Dev. C.											++
Environment-scanning C.							++	++	++		
Imitation C.											+
Networking & Collaboration C									+	++	+

7.3 Case C

Firm C was founded in the year 2000 to provide carton boxes to other local businesses. Their production base is in Trabzon, Northern Black Sea region of Turkey. Firm C was founded by two entrepreneurs. The partnership structure of the firm has changed due to one of the founders passing away. Today, four partners have shares in this firm. One partner manages the firm, the rest of the stakeholders do not have any management roles. They began their journey with seven employees and now employ approximately 20 workers. They produce carton boxes with different specifications as Figure 7.5 illustrates.

When first contacted via telephone, the company manager was happy to invite me to the firm for this research. In our first meeting, I conducted a diagnostic to understand any issues they were currently facing and the current maturity levels of their organisational capabilities. As a result of the first diagnostic, organisational capabilities were identified as follows: Learning capabilities were not developed and limited to the manager. There was a command and control culture and no employee participation. Operational

capabilities were also not developed in that there were no continuous improvement activities, strategy was only known by the owner and employees were not focused on the same goals as the owner. Finally, dynamic capabilities were not developed. In addition, the firm was facing issues with productivity, unskilled employees, standardisation and entering new markets. I designed some interventions to solve these problems and also contributed to the development of certain organisational capabilities. Appendix includes full details of the diagnostic, maturity assessments and designing interventions.

Figure 7.5 Product examples of firm C

7.3.1 Maturity Assessment of Firm C

The maturity assessment aimed to identify changes occurring based on interventions. While some interventions were implemented and contributed to the development of certain capabilities, others were not or only partially implemented. Table 7.5 represents the maturity assessment of firm C.

Table 7.5 Maturity assessment of firm C

Foundation Level Capabilities	Capability Maturity Level				Interventions								Explanation
					F	F	PI	PI	I	PI	I	F	
	Basic	Intermediate	Advanced	Leading	CI Training	Investing New Equipment	5S Training	SMED Training	Suggestion Scheme	Management Coaching	Developing Customer Engagement	Collaborating with other organisations	+ Positive Impact ++ Strong Positive Impact ( ) Expected Impact ⟶ Development Trend/Change
Foundation Level Capabilities													
Organisational Culture	**XX**												
Employee Participation	X ⟶				(+)		+	+	++	+			Employee participation has increased slightly.
Empowerment	X				(+)		(+)		(+)	(++)			Stable as the owner does not want to share his authority.
Learning	X				(+)		+	+	++			(+)	Employees are more open to learn new things.
Operational Capabilities													
Strategy Dev. and Implementation		**XX**											
Strategy development		X											
Strategy implementation	X ⟶									++			Strategy is shared with employees and they are more aware what is expected from them.
Continuous Improvement C.	**XX**												
5S	X ⟶				(++)		++						In some workstations 5S has been implemented.
Visual Management	X				(++)		(+)						

	Standardisation	X				(++)	(++)							Economic limitations.
	Problem Solving	X	→			(++)		+	+	++				Employees started to report problems and suggest possible solutions.
	SMED	X	→			(++)			++			+		They identified causes of long CO times and eliminated those causes.
Dynamic Capabilities														
Networking and Collaboration Capability			X								(+)		(++)	Owner states he tries to attend more meetings and meet more people. However, he is busy with operations. Thus, there is no observable change in this area
Environment-Scanning Capability			X	→		(+)				+	+		(++)	Some employees have started to search online and find some ideas for suggestion cards to gain some rewards.
Innovation and Product Development Capability				X							+	+	(++)	Employees help each other to increase production quality.
Imitation/Replication Capability			X											
Reconfiguration Capability			X											
Marketing and Sales Capability			X	→								++		Giving customer better price and higher quality.
Decision-making Capability			X											

7.3.2 Within Case Analysis – RQ4 and RQ5

Learning capability was identified as being very immature in the first diagnostic. However, after some interventions were implemented, a positive change was observed. Introducing a suggestion scheme system, SMED and 5S training encouraged employees to share their ideas to improve processes. For instance, one of the employees explained *"Nobody was asking or listening to me. However, I have worked on this machine for six years and I know more than anyone else in this firm about this machine. This idea of sharing cards is a good way to show our ideas to the owner and supervisor."* Another operator said *"When I went home, I started to search box production videos on YouTube to see if there is anything different than what we do."* 5S and SMED training changed the behaviour of operators; before the training there were unplaced tools all around the production floor but after training had been delivered, they started to put tools and equipment in their correct places. As a result of my observations and conversations with employees, there is a positive trend towards learning capability at firm C and it can be suggested that encouraging idea sharing, and implementing basic lean production tools such as 5S, SMED contributes to the development of learning capability in micro enterprises. Moreover, organisational capabilities also affect each other's development. All organisational capabilities have a positive impact on the development of a learning routine but organisational culture has a slight positive impact on learning capability at this firm. For instance, the owner highlighted "*I had never asked them to contribute to this firm by suggesting ideas and improving processes. I realised that I was wrong; they now try to suggest ideas and we create a positive competition between employees*." It can be concluded from this statement that organisation culture has slightly changed and employees are open to learn. It can be suggested that a participative organisational culture can contribute to the development of learning routines.

Organisational culture

Employee participation did not exist when I first visited the firm. After some interventions were implemented positive change was observed. 5S and SMED training, introducing a suggestions scheme system, training an employee into a continuous improvement facilitator position and management coaching interventions were designed to increase employee participation at the firm. Training a CI facilitator intervention was not implemented as the employee identified for this position left the firm for another

job. At a management coaching meeting, I emphasised that the owner should make the strategy clear and share this with his employees in order for everyone to focus on the same targets. At my final visit, the manager confirmed that he had shared the firm's strategy and I observed that employees were more focused on quality and productivity than before. The owner explained *"Teaching them our strategy helped us to increase our quality so employees stop hiding small mistakes".* From the employees' point of view, they considered the owner's behaviour very positive. An employee stated, *"we were not able to speak with him and scared to point out a problem in production. Now we know if there is a problem at the machine and if it affects quality, we can stop the machine and ask for a repair".* Moreover, 5S and SMED implementations gave more responsibilities to employees and contributed to the development of employee participation. In addition, as stated above, the suggestion scheme system encourages employees to share their ideas. As a result, a positive trend of employee participation was identified and it can be suggested that implementing 5S and SMED, sharing strategy with employees, and encouraging them to share ideas contributes to the development of employee participation. On the other hand, learning capability has a positive development trend and it is observed that employees who search and scan for new knowledge share more ideas and are more involved with improvement activities. It is also expected to see that empowerment would have a positive impact on employee participation but empowerment issues could not be solved. Thus, it cannot be suggested, for this firm, that empowerment has had a positive impact on employee participation. As a result, learning capability has a positive impact on employee participation.

Empowerment was identified as one of the main issues at this firm. The owner has a strong personality and does not trust his employees and this prevents him from sharing his authority with them. Thus, management coaching intervention was designed to solve the firm's empowerment issues. Also, training a CI facilitator and developing a suggestion scheme intervention could have a positive impact. Nevertheless, although I emphasised that sharing his authority would motivate employees to give more to their job and encourage them to remain with the firm, thus instilling in them a feeling of belonging he did not change his attitude and did not share any of his power during this research. He explained *"I had another factory before I created this one. Once employees participated in a labour union and requested unacceptable things, I got bored and sold the factory. Thus, I do not trust employees at all."* As a result of his

intransigence, as stated above, the employee who was identified to be the CI facilitator left the firm because could not gain more responsibility. Finally, it is predicted that more employee participation and successful idea generation processes could enable the owner to place more trust in his employees but he was very inflexible in his opinion. As a result, empowerment remains an issue at this firm as the owner chose not to share his authority. It can be claimed that owners should be open to share authority with employees to solve empowerment issues in micro enterprises. On the other hand, development of a learning capability and employee participation would help to solve empowerment issues within this firm, but there was no observable change. Thus, it is hard to make any statement.

Operational capabilities were very limited at the firm and analysed as follows:
Continuous improvement capability was very limited. There were no improvement activities at all. 5S and SMED training, purchasing new monitoring equipment, introducing a suggestion scheme system and training CI facilitator intervention was also designed to develop the continuous improvement capability. There were too many changeovers in the firm and with some machines this took too long (I observed eight different changeovers taking from 40 to 80 minutes). Changeover times were reduced by 30% by eliminating some processes and preparing all equipment before the changeover began. 5S training helped to sustain order in the working environment to increase productivity. Employees put equipment back in place after use and one employee commented *"I knew that I would have to hide a tool to find it next time because when someone took it, I had to look all around for it."* They have limited tools and equipment most of which the employees share. Thus, equipment and tools need dedicated areas to reduce time searching for them. Furthermore, suggestions from employees brought different solutions to problems. I checked some idea cards over several months. There were good problem solving ideas. Finally, training a CI facilitator who could monitor all CI activities and design more to develop CI capability but as mentioned above, the employee left the company. As a result, continuous improvement activities increased at the firm. It can be stated that encouraging employee participation, 5S and SMED type of lean production tools can contribute to the development of continuous improvement activities in micro enterprises. On the other hand, continuous improvement capability is not only developed because of interventions but, additionally, development of learning routines and employee participation can contribute to the

development of continuous improvement capability. The owner accepted that *"We did not receive this many ideas from employees at the beginning of this firm. It is good to see them now trying to solve their issues."* Over a six months period employees suggested 198 different ideas most of which concerned purchasing new machines they had seen online. This proves that development of learning and employee participation has a positive impact on the development of a continuous improvement capability.

The *strategy development and implementation capability* was very immature at the firm. Strategy was only defined and known by the owner. Thus, implementation strategies at the firm were a challenge. During management coaching intervention, I advised the owner to share the strategy and define priorities in order for employees to understand what is important. After the owner shared the priorities and strategy with employees, the quality of products increased, the amount of scrap reduced and implementing new ideas became easier. One of the employees who worked at the first work station commented *"This machine is the most important one for the quality of the carton box because we are producing cartons. If there is any mistake at this stage, it will cause more mistakes in the following stages but we were not able to stop the machine if anything went wrong. We were hiding it and trying to correct it while production continued. After the owner said quality is our first priority, we suggested he give us permission to stop the machine if something is wrong with the quality. He gave us permission and we were able to reduce scrap and increase carton quality."* As a result, the strategy development and implementation capability had a positive effect. Therefore, developing strategy, defining priorities, sharing these with employees and supporting employees in implementing strategy contributes to strategy development and implementation capability in micro enterprises. On the other hand, other capabilities also have an impact on strategy development and implementation capability. Continuous improvement capability, learning and a participative culture enable employees to implement changes easier and quicker. I observed that employees` behaviour changed during nine months. They became more open for new ideas and with less resistance to change. Moreover, it was expected to observe that solving empowerment issues would help them to improve the strategy development capability. However, the empowerment issue still existed and it is hard to make any statement. As a result, it can be suggested that continuous improvement capability, learning capability and employee participation has a positive impact on strategy development and implementation capability.

Four types of dynamic capabilities were found relevant in firm C as follows:

Environment-scanning capability was very limited to the owner's abilities. Thus, collaboration with other organisations such as universities, government support organisations and other businesses, management coaching and suggestion scheme interventions were designed to contribute to the development of the environment-scanning capability. During management coaching, it was emphasised to the owner that he needed to create slack time in order to spend time developing dynamic capabilities. However, he continued to monitor and control all operational day-to-day activities at the firm, which prevented him from attending sectorial meetings or visiting universities. As a consequence his scanning activities remained very limited and also restricted him from implementing collaboration intervention. However, the suggestion scheme intervention encouraged and led employees to search and scan for new knowledge and, as mentioned above, employees used the internet to learn new technologies and bring new ideas to the business. As a result, more people were involved in scanning activities which had a positive development trend. It can be stated that encouraging employee participation and idea generation in a firm can contribute to the development of environment-scanning capability in micro enterprises. On the other hand, other capabilities contribute to the development of the environment-scanning capability. Development of continuous improvement capability encourages employees to search and scan new ideas. As mentioned earlier, employees began to search online to suggest new ideas. Employee participation also has a positive impact on the development of the environment-scanning capability. In this firm, although, it is expected to observe positive impacts of empowerment, it is hard to make any statement due to the unsolved empowerment issue. In addition, development of a networking and collaboration capability contributes to the development of an environment-scanning capability. For instance, the owner expressed the view *"my friends who work in different sectors inform me about new legislation or a funding opportunity."* As a result, it can be concluded that learning capability, continuous improvement capability, employee participation, and networking and collaboration capability have a positive impact on the development of the environment-scanning capability.

Networking and collaboration capability had limited development. Collaboration with other organisations and management coaching interventions were designed to contribute

to the development of networking and collaboration capability. But neither interventions could not implemented so there was no development of networking and collaboration capability at this period.

Marketing and sales capability was very limited. Development of customer engagement was designed to contribute to the development of marketing and sales capability. During the first diagnostic, the owner stated *"Our sales team suggests too many colour options without any explanation to our customers and this caused low productivity and higher cost".* Based on this statement, I suggested sharing more information about the production process with customers and give them reason why they should choose fewer colours in order to obtain a better price. In this way, while customers are able to obtain a better price, the organisation is also able to increase productivity. They changed their marketing strategy and this also changed some of their customer behaviours as the owner explained *"most of our customers are local small businesses and one of their priorities is low cost. Since our sales team began to explain our costs to customers and this reduced the usage of different colours we created a win-win situation for both sides of this trade."* As a result, there is a positive trend towards development of marketing and sales capability. It can be stated that developing marketing strategy, understanding customers' behaviours, and sharing more information with customers can contribute to the development of marketing and sales capability in micro enterprises. Additionally, operations should support marketing and sales activities. Low productivity and long lead times lead customers to choose other suppliers. Continuous improvement capability aims to achieve operational excellence and the owner says that *"I could reach more customers if I could reduce my costs".* However, the marketing strategy was wrong, as mentioned above. Strategy development and implementation capability also contribute to the development of marketing and sales capability. The owner commented *"You should know people who know other people so you can make trade with the friends of your friends."* He was aware of importance networking and collaboration for marketing and sales capability. He mentioned a product that changed market behaviour and all local bakers began to use carton boxes rather than paper, proving that innovation and product development also increase sales. As a result, it can be concluded that learning, continuous improvement, strategy development and implementation, networking and collaboration, environment-scanning and innovation and product

development capabilities contribute to the development of marketing and sales capability.

Innovation and product development capability was developed at this firm. They produced very local products and changed some market behaviours with their products. Development of customer engagement and collaboration with other organisations' interventions were designed to contribute to the development of innovation and product development capability. Collaboration with other organisations' interventions could not implemented, therefore no comment can be made regarding this capability. In addition, customer engagement helps to innovate products. For instance, the owner explained *"We design specific carton boxes for special customers. They explain to us what they will put in it and what conditions the box will face. We design the best product for them. Sometimes customers just ask for a specific size but do not give enough other information and then they complain about quality or cost. Thus, it is important to understand customer needs; this also helps us to produce new types of boxes."* As a result, there is a positive trend in the development of innovation and product development capability at the firm. It can be suggested that understanding specific and new customer needs can contribute to the development of innovation and product development capability. On the other hand, the owner expressed the point that *"We found a new machine that can produce different types of boxes but we did not have enough funds for this investment. Thus, we decided to apply to a government support organisation. However, we did not have any experience so we collaborated with another consultancy company to proceed with the application process for funds. Eventually, we received the funds and invested for that machine"*. This statement proves that networking and collaboration capability supports innovation and product development capability. Moreover, employees began to innovate processes; therefore continuous improvement capability also supports development of innovation and product development capability. The owner highlighted *"We need to understand local needs before big competitors otherwise they can come and take all of our customers."* This statement emphasises the importance of the environment-scanning capability for innovation and product development. They also collaborate with their customers to produce the best products. Moreover, customers also encourage them to produce new products as the owner mentioned *"one of my family's friends who has a factory asked me to invest a in a machine so I can produce different type of boxes for his firm and*

others." Thus, networking and collaboration capability contributes to the development of innovation and product development capability. As a result, learning, organisational culture, continuous improvement, strategy development and implementation, networking and collaboration, and environment-scanning capabilities have a positive impact on the development of innovation and product development capability.

To summarise, interventions that require low cost and practical knowledge contribute to the development of certain capabilities as long as there is no resistance against them. Furthermore, capabilities evolve together and support each other during development at this firm. All relationships between interventions and capabilities are represented in Figure 7.6 and Table 7.6.

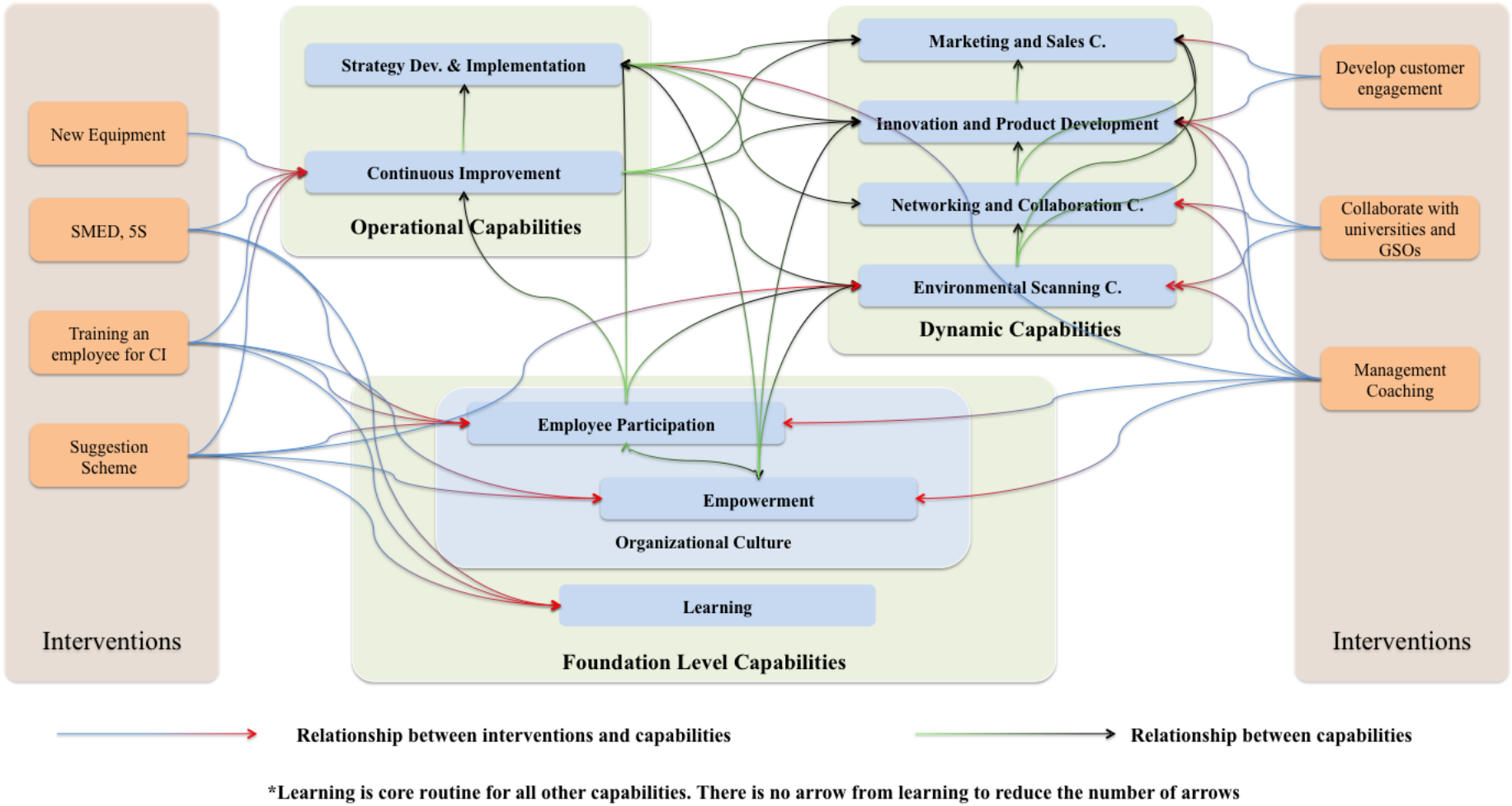

Figure 7.6 Relationships between interventions and capabilities in firm C

Table 7.6 Relationships between capabilities in firm C

	Learning	Employee Participation	Empowerment	CI	Strategy Development and implementation	Environment-scanning Capability	Networking and Collaboration Capability	Innovation and Product Development Capability	Marketing and Sales Capability
Learning	NA	++	++	++	++	++	++	++	++
Employee Participation	+	NA	+	++	+	+		+	+
Empowerment		++	NA		++	+	+	+	
CI				NA	+	+		+	+
Strategy Dev. & I.					NA		+	++	++
Environment-scanning C.						NA	+	++	+
Networking and Collaboration C.						+	NA	++	+
Innovation & Product Development C.							+	NA	+
Marketing & Sales C.									NA

7.4 Case D

Firm D was founded in 2013 to produce organic jams (without any preservatives). The firm began its journey with an owner/founder; one full-time and one part-time employee are employed today. Their main operations are producing jam, serving breakfasts at their restaurant and selling their products. They produce different types of jams and soups. Figure 7.7 represents some of their products.

Figure 7.7 Product examples of firm D

7.4.1 Maturity Assessment of firm D

Maturity assessments were conducted first in June 2014 and finally in May 2015. Table 7.7 compares the change concerning capabilities before and after interventions. While some interventions were implemented and contributed to the development of certain capabilities, others were only partially or not implemented. Table 7.7 represents the maturity assessment of firm D.

Table 7.7 Maturity assessment of firm D

Foundation Level Capabilities	Capability Maturity Level				Interventions								Explanation
					PI	I	I	PI	F	PI	I	PI	
	Basic	Intermediate	Advanced	Leading	5S	FIFO	Packaging Solution	Collaboration with farmers	Collaboration with agencies	Customer engagement dev.	Website	Developing strategy	
Culture	**XX**												
Employee Participation	X	●→			+								Employee understands that there are more expectations from her such as being nice to customers or keeping everything clean and in order.
Empowerment	X												Owner monitors and controls all activities.
Learning	X												Learning activities is limited to the owner.
Operational Capabilities													
Strategy Development and implementation	**XX**												
Strategy development	X	●→	→										Marketing and sales strategy developed.
Strategy implementation	X	●→											Some difficulties exist such as lack of sales training.
Continuous Improvement	**XX**												
5S	X	●→			++								Kitchen has its rules and everything has a dedicated place but can still be improved.
Visual Management	X												Still no visual management activities.

	Standardisation	X→					+	+	+					Packaging issues have been solved.
	Problem Solving	X												Owner does not see many thing as a problem so there is still no activity.
	SMED	X												Not applicable.
Dynamic Capabilities			**XX**											
Networking and Collaboration Capability			X→											Owner cares about her network and is aware of the importance of networking and collaboration activities.
Environment-scanning Capability		X→												Owner spends more time to find new customers and looking for new product ideas.
Innovation and Product Development Capability			X											There are some new product development activities such as trying new fruits to create different tastes.
Imitation/Replication Capability		X												Not applicable.
Reconfiguration Capability		X												Not applicable.
Marketing and Sales Capability		X→							+		++	+	++	+	Marketing strategy worked very well. Sales have increased.
Decision-making Capability		X												+	There is no significant change.

7.4.2 Within Case Analysis – RQ4 and RQ5

Learning capability was not developed in this firm. Individual learning is more relevant with this firm due to the number of employees. The owner is open to new ideas and looking for new knowledge. However, she does not have any management education and this prevents her from finding solutions for basic problems. Thus, many interventions are designed to solve problems in the firm and each helps her to learn new knowledge. Two interventions – developing customer relationships and collaboration with other businesses and agencies – are identified as the source of new knowledge at the firm. She explains that *"I began my business by selling one to two jars to working people. They finally convinced me to apply for a fund from local government and a women's support charity. Finally, I could open my own business with their support. I am still listening to all my customers because all of them have different knowledge. In addition, I am visiting some other businesses to sell my products to them, such as supermarkets; they also give feedback about products. For instance, I began my business with only jams but some of my customers asked me if I can produce instant soup so I began to produce instant soup."* All interventions have a positive impact on the development of learning capability at firm. However, as the owner's statement shows, developing good relationships with customers and collaborating with other businesses and government organisations are a source of new knowledge. Thus, it can be suggested that developing customer relationships and collaboration with other businesses and government organisations contributes to the development of learning capability in micro enterprises.

Employee participation was not an issue during the first diagnostic due to the number of employees (only one). However, one part-time and one full-time employee have been employed during these nine months. Although there were no interventions aimed at improving employee participation, it is observed that certain interventions have had a positive impact on employee participation such as FIFO and 5S. It is observed that the employee responsible for the kitchen and restaurant follows 5S and FIFO rules without asking for further supervision from the owner. She is able to manage the kitchen alone. 5S and FIFO create rules that everyone follows. Thus, it can be suggested that tools like 5S and FIFO can give control of basic day-to-day activities to employees in micro enterprises.

Empowerment is not an issue at this level due to the number of employees. The owner is also an employee and she does most of the work alone. Thus, empowerment cannot be seen as a problem.

Continuous improvement capability was not developed at all. The firm has no continuous improvement activities. Thus, some interventions are designed to improve operation productivity such as packaging improvement, 5S, FIFO, and developing good relationships with local farmers. 5S training enabled them to define standard places for all equipment in the kitchen. It is observed that the employees and owner follow 5S rules to replace each item after use. Moreover, the owner highlights that *"I should have fresh fruits all the time. Thus I stock all kind of fruits in freezer but fruits in the freezer can expire as I forget to cook them."* Thus, the FIFO system enables them to label when the fruit is placed in the freezer and when they should take it out and cook. Furthermore, there were some packaging problems and owner explained *"I have customers in other cities but sometimes my jars are broken during transport and this costs me a lot".* Thus, a packaging solution was developed with a local company. They produced strong boxes that can protect jars from any damage. Finally, fruit supplementation is another issue for the firm. The owner has her own farms but she still buys from other farmers. She needs fresh, high quality, fruits and she needs to develop good relationships with local farmers because some fruits are rare in the area and not all farmers harvest them due to the difficulties such as rose hips, bilberries and black mulberries. Thus, developing good relationships with farmers is key for quality standards and fruit supplementation. As a result, it can be stated that 5S, FIFO, improving packaging, and developing good relationships interventions have a positive impact on the development of continuous improvement capability in the firm.

Strategy development and implementation capability was not developed in the firm. Thus, a strategy intervention was designed. It is observed that the marketing strategy which was developed and implemented together with owner, contributed to sales. The owner says that *"I had no plan to sell my products and did not know how to approach supermarkets to sell my products. That meeting helped me to understand how I can contact them and how I can make my products more attractive."* As a result it is observed that developing a strategy with owner helped her to learn how to formulate a

strategy and implement it. Hence, it can be concluded that developing a strategy contributes to strategy development and implementation capability.

Decision-making capability was not developed in the first diagnostic and there were no observable improvement after nine months. However, it is observed that the owner makes decisions based on her knowledge. For instance, when she learned something new, she became excited and said *"let's do it"*. This attitude misleads her to focus on unrelated activities. Thus, she is advised to focus on achievable targets in strategy development meetings. Moreover, it is also observed that when she has a strategy, she makes her decisions based on that strategy. For instance, she aims to sell her products where students live. Thus, she visited all the markets around the local university area. As a result, it can be concluded that strategy development intervention, and strategy development and implementation capability has a positive impact on the development of the decision-making capability.

Marketing and sales capability was not developed in the firm and it was identified as an important issue. Thus, some interventions were designed to improve marketing and sales capability such as developing a marketing strategy, establishing a website, developing customer relationships and collaborating with other businesses. The firm's marketing strategy is defined as *"to find correct markets, to collaborate with tourism agencies and coach companies, to make products more visible and accessible".* Other interventions were designed based on the marketing strategy. It is observed that within six months more customers were brought to the business following the development of the marketing strategy. As the owner explains *"A boutique hotel owner from Antalya called me a couple months ago. She was looking for organic foods for her guests and found me online. I sent her some samples which she liked a lot and she purchases from me different type of jams."* This statement proves that establishing a website has had a positive impact on marketing. Furthermore, it is observed that the owner started to collaborate with some coach companies. She arranged for buses stop in order for their passengers purchase from her. Finally, the owner commented *"I visit some of my customers` special days to represent my products and sell to their guests."* It can be stated that she is not only using her customers as a source of new knowledge, she also use her customers as a networking and marketing opportunity. As a result, it can be concluded that interventions to develop the marketing strategy, establishing a website,

developing customer engagement, and collaborating with other businesses contribute to the development of the marketing and sales capability. Certain capabilities also have a positive influence on the marketing and sales capability development such as learning, innovation and product development, networking and collaboration, strategy development and implementation, and continuous improvement capabilities. As mentioned above, packaging issues prevented customers buying from the firm. Thus, improving the packaging and service quality can contribute to sales. It can be stated that continuous improvement contributes to the marketing and sales capability. Moreover, the owner commented *"I produce different type of jams which are new for my customers. Those products open new markets for us. Many customers like to try different tastes. Thus, I am trying to find new tastes with different local fruits."* This statement evidences the positive relationship between innovation and product development, and marketing and sales capabilities. In addition, the owner emphasised the contribution of her network to the business. She highlighted that *"my first customers helped me to find new customers such as they invited me to their weekly meetings and special days to present my products. In addition, they found new customers. I cannot ignore their contribution to my business."* This statement shows the importance of networking and collaboration to the marketing and sales capability in this firm. As a result, it can be suggested that learning, strategy development and implementation, networking and collaboration, and innovation and product development capabilities contribute to the marketing and sales capability development.

Innovation and product development capability was identified as being at an intermediate maturity level during the first diagnostic. It is observed that developing a customer relationship intervention has a positive impact on the development of innovation and product development capability. The owner explained *"I began my journey with jams but my customers requested different products such as pickles and instant handmade soup. Eventually, I began to produce different products especially trying to find new jams with different fruits."* Hence, it can be stated that customers are drivers of the innovation and product development capability at this firm. On the other hand, certain capabilities have a positive impact on innovation and product development capability such as learning and environment-scanning capabilities.

Networking and collaboration capability was identified as being at an intermediate maturity level in the first diagnostic. Although the owner stated the contribution of her network for the firm, there is still an improvement opportunity. Thus, some interventions were designed to improve the networking and collaboration capability such as developing good relationships with local farmers and developing collaboration with other businesses. It was explained to owner how she can collaborate with other businesses. Eventually, she collaborated with three coach companies and one tourism company to stop for a break in front of her shop. Moreover, she has an agreement with three big local supermarkets and one boutique hotel to sell her products. As a result, it can be suggested that designed interventions have a positive impact on networking and collaboration capability development. Furthermore, certain capabilities contribute to the development of networking and collaboration capability such as learning and environment-scanning capability. It is observed that the owner uses her network to find new collaboration opportunities. Her scanning activities include visiting government organisations and charities to find opportunities. Hence, it can be suggested that if the environment-scanning capability develops, it can contribute to the development of networking and collaboration capability as well.

Environment-scanning capability was not developed in the firm. The owner does not have computer knowledge to undertake online scanning. Thus, she uses her networks to identify new opportunities and threats. The owner explained this scanning process as *"People who work in government support organisations, my customers or my relatives inform me about new funding opportunities. For instance, if there is a festival near to us, they inform me and give me permission to open a stand to present my products and make sales."* This statement proves the relationship between network and environment-scanning activities. As a result, it can be suggested that learning, and networking and collaboration capabilities have a positive impact on the environment-scanning capability.

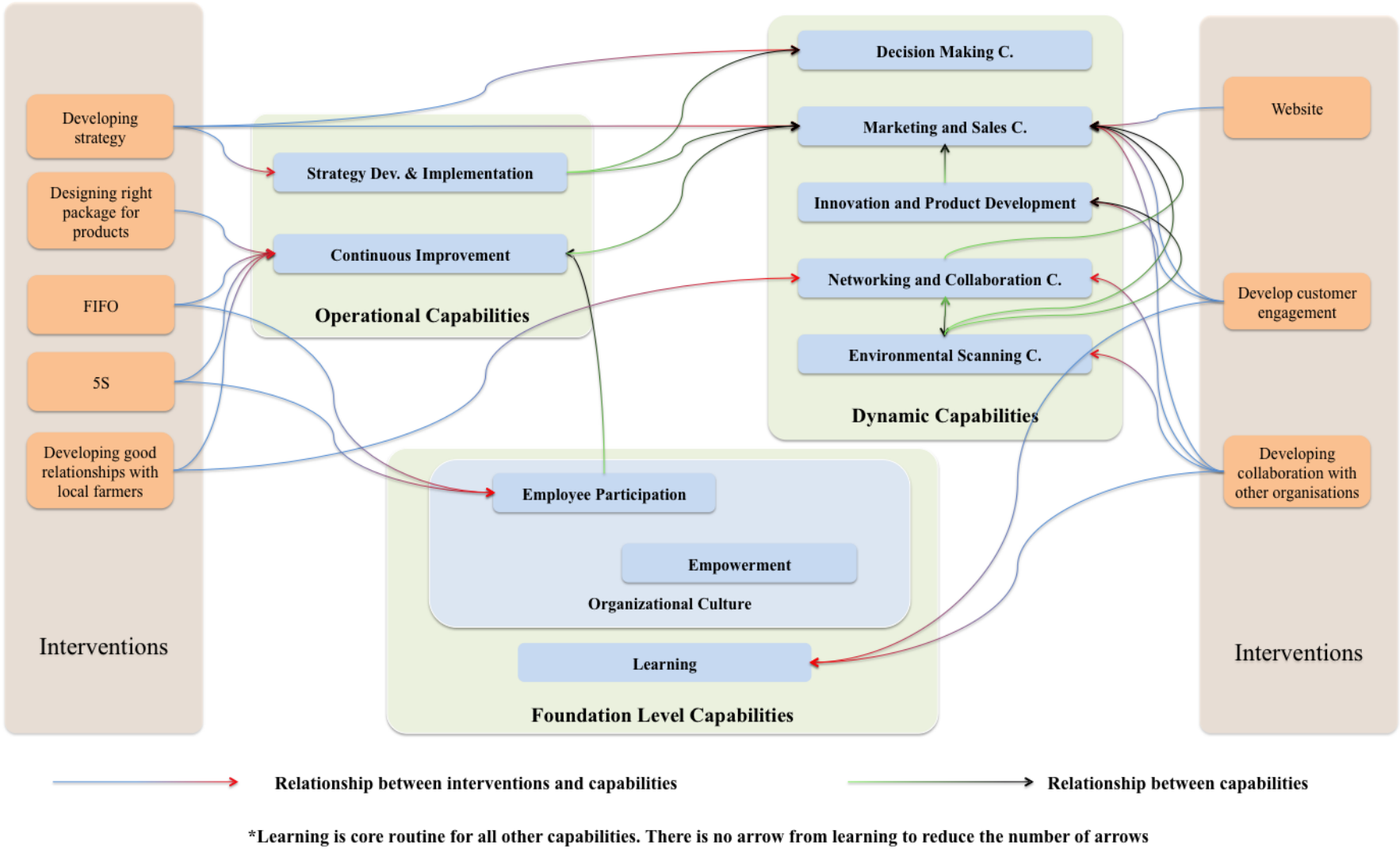

Figure 7.8 Relationship between capabilities and interventions in firm D

Table 7.8 Relationships between capabilities in firm D

	Learning	Employee participation	Empowerment	CI	Strategy D&I	Decision-making C.	Marketing & Sales C.	Innovation & Product Development C.	Environment-scanning C.	Imitation C.	Networking & Collaboration C
Learning		++	++	++	++	++	++	++	++	++	++
Employee participation				++							
CI							+				
Strategy D&I						+	+				
Innovation & Product Development C.							+				
Environment-scanning C.							+	+			++
Networking & Collaboration C							+	+			

8 CROSSCASE ANALYSIS AND FINDINGS

In this section, cross-case analysis is conducted to understand similarities and differences between cases and findings are represented at the end of the chapter.

8.1 Cross-Case Analysis

Each firm faces different situations and has different characteristics. It is essential to understand these differences to evaluate the success or failure of interventions in each firm. Differences between firms, which are identified before any intervention is suggested, are identified as Table 8.1 represents. All capabilities are illustrated based on their maturity and capacity level before the interventions as figure 8.1 and 8.2. Understanding dimension of capabilities provide significant information before designing an intervention. For instance, strategy development capability of firm A and B are undeveloped but while firm A has knowledge to develop a strategy, owner do not have time – do not have capacity to do it. On the other hand, owner/manager of firm B has time – capacity – to develop a strategy but do not know how to develop a strategy. Furthermore, interventions are designed slightly different such as creating slack time for owner of firm A and training about strategy development for owner of firm B to develop strategy development capability in each firm.

Firms face similar and specific issues that prevent them from improving their performance. Table 8.2 represents issues that firms deal with and the current status of those issues as improved, partially improved, or not improved. For instance, firm A, B and C were facing empowerment issues; some interventions were suggested, as presented in Table 8.2, and the problem improved in firms A and B. However, firm C still faces the same problems as the owner does not trust his employees and is not willing to share his authority with them. Additionally, firms had difficulties in defining and formulating their strategy. Interventions were designed to teach them how to formulate strategies and all firms experienced improvement following strategy development. Details of all identified problems and their current status, following implementation of certain interventions, are represented in Table 8.2.

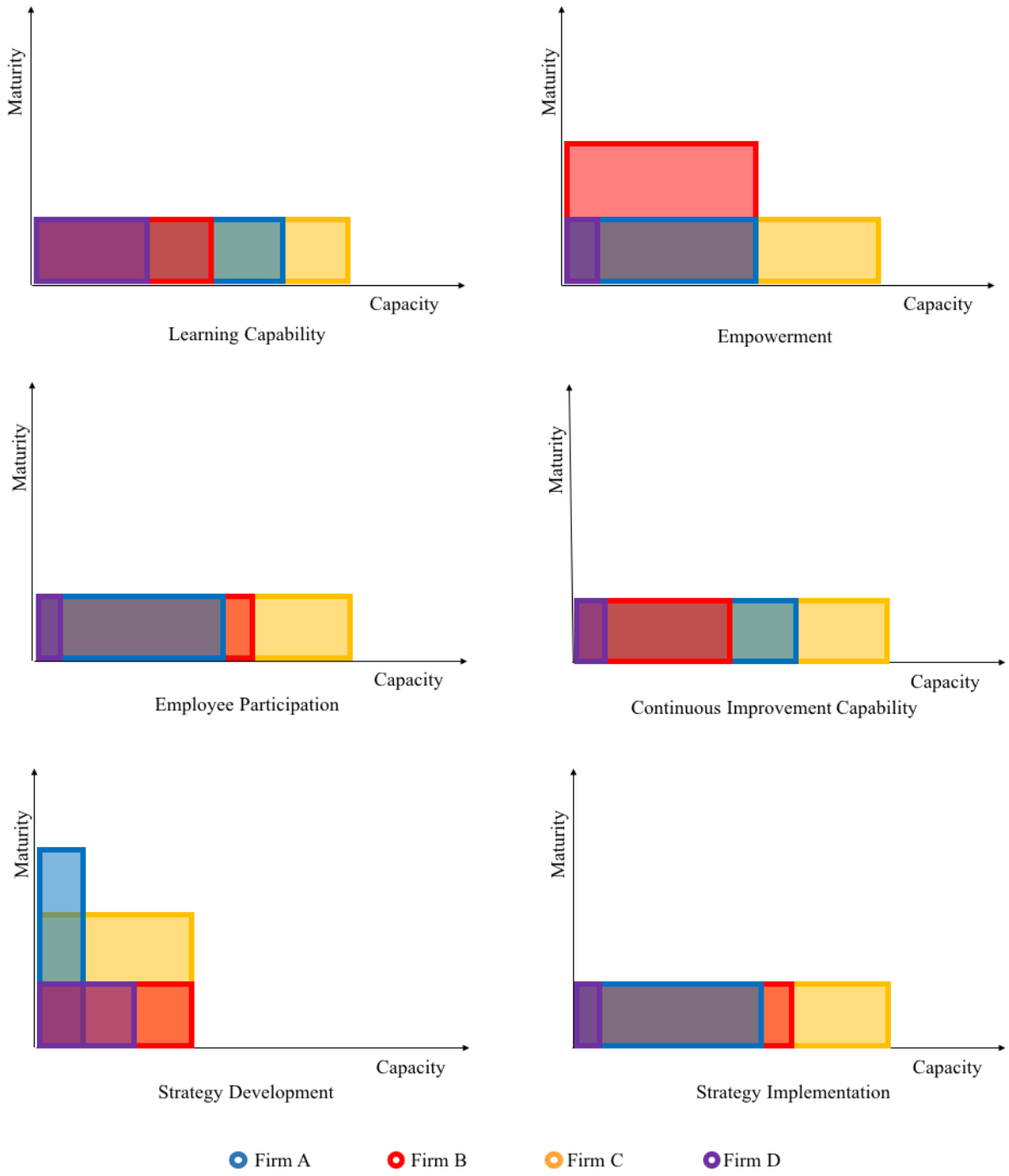

Figure 8.1 Dimensions of foundation level and operational capabilities of each firm

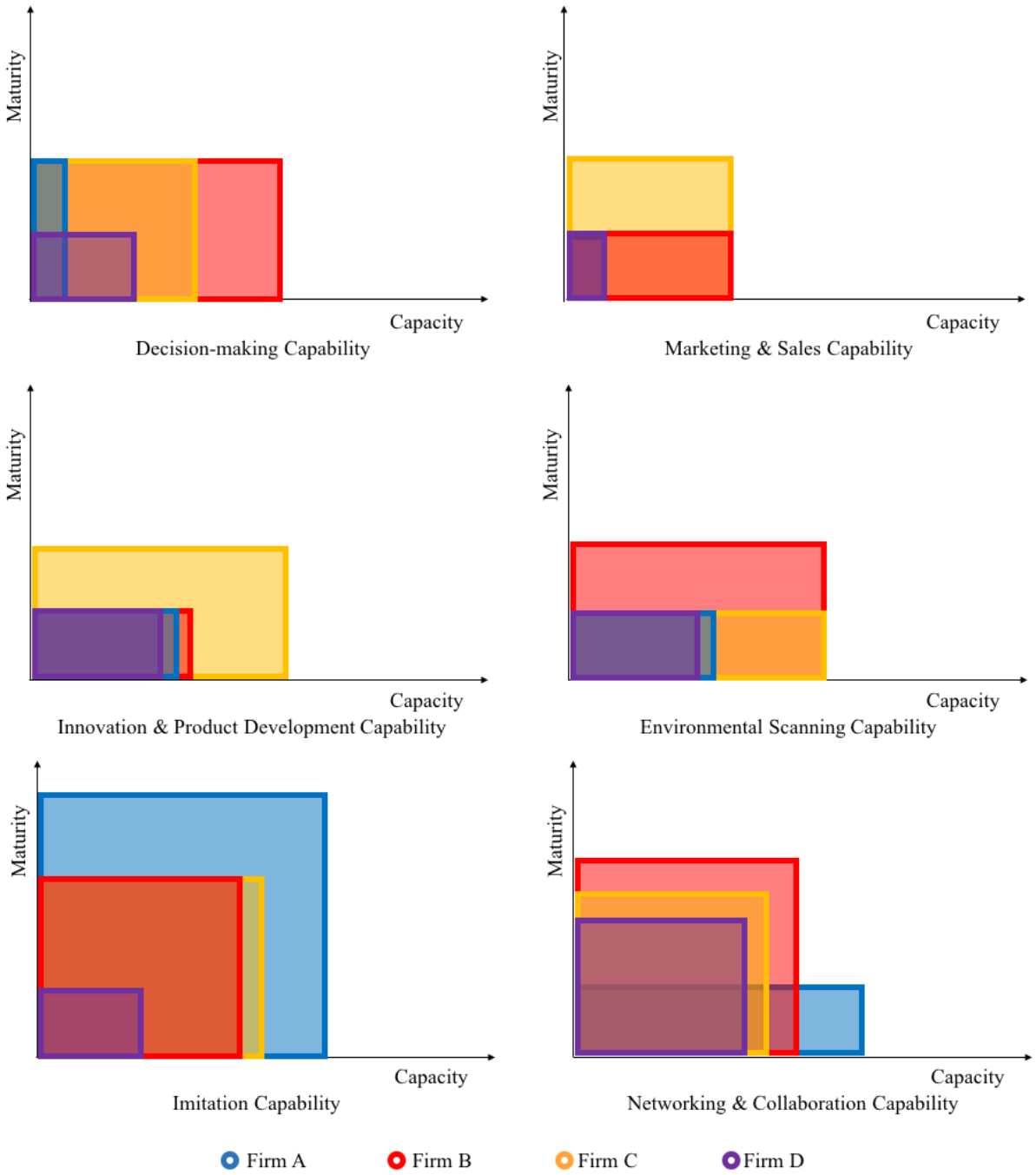

Figure 8.2 Dimensions of dynamic capabilities of each firm

Table 8.1 Comparison of four firms

	Firm A	**Firm B**	**Firm C**	**Firm D**
Owner/ Manager	✓Open to change ✓Friendly with employees ✓Undergraduate degree	✓Open to change ✓Friendly with employees ✓Undergraduate degree	✓Not open to change ✓Strict ✓Undergraduate degree	✓ Open to learn ✓ Primary school graduate
Employees	✓Hierarchical order based on experience and mastery levels ✓Open for new knowledge ✓Employees see themselves as part of the business ✓Low employee turnover rate	✓Low level educational background ✓Difficulties in learning new knowledge ✓Employees tend to leave when they have better job opportunity	✓Employees do not feel they belong to firm ✓Employees show resilience against change ✓High employee turnover rate	✓Employees see themselves as family members
Environment, opportunities and threat	✓High competition (locally) ✓Quality of products high and people tend to buy higher quality furniture ✓They can imitate any model before their competitors ✓The number of big companies in local market increased dramatically in recent years	✓Low competition (locally) ✓Customer base high; they also buy and sell other components which they can produce in the future ✓Raw materials from abroad and fluctuations in currency can have devastating impact	✓Low competition (locally) ✓All local market and big customer base ✓Manager does not focus on strategic activities and does not like to change; may cause problems in future	✓ High competition ✓ Healthy product consumers increased recently; growing market ✓ Accessing new markets and business easily imitated
Industry	✓Investment costs are medium ✓Requires high level of experience ✓Employee cost higher than the other industries	✓Investment costs are high ✓Requires certain level of knowledge ✓Employee cost is low	✓Investment costs are high ✓Requires certain level of knowledge ✓Employee cost is low	✓ Investment costs are low ✓ Easy to learn and imitate ✓ Low employee cost
Financial resources	✓Limited ✓Can use their own savings or borrow from relatives and friends	✓Limited ✓Benefit from government support and funds	✓ Limited ✓ Use both their own financial assets and government support and funds	✓ Very limited ✓ All investment costs covered by government and non-government support organisations

Table 8.2 Comparison of issues that companies face and current situation

Issues	**Firm A**		**Firm B**		**Firm C**		**Firm D**	
	Identified	Improved	Identified	Improved	Identified	Improved	Identified	Improved
Skilled employees			✓	✗	✓	✗		
Empowerment/Organisation Structure	✓	✓	✓	✓	✓	✗		
Sales	✓	☐					✓	✓
Marketing	✓	☐					✓	✓
Productivity			✓	☐	✓	☐	✓	✓
Strategy	✓	✓	✓	✓	✓	✓	✓	✓
Collaboration	✓	☐	✓	✓	✓	☐	✓	☐
Customer engagement	✓	☐			✓	☐	✓	✓
✓ Improved ✗ Not Improved ☐ Partially Improved								

Implementation of suggested interventions was different in each firm as Table 8.3 represents. Implementation of interventions varies in each case due to the cost of intervention, required knowledge, willingness of owner, etc. Firm A performed considerably well in the implementation of suggested interventions. They tried to implement all interventions; nevertheless, several interventions were partially implemented. For instance, a product catalogue has not been printed; however, they show customers computer images of all their products. Firm B implemented all the suggested interventions. The owner encouraged his employees to successful implement interventions and monitors all activities. Firm D tried to implement all the intervention suggested. The owner is willing to learn and improve her business. Thus, she has implemented all but one of the interventions. She opened a Facebook page to represent her products but she could not sustain updating the page regularly due to her limited computer skills. On the other hand, firm C did not perform well at implementing the suggested interventions. There were different reasons behind this failure such as a skilled employee left the firm for another job, the owner did not want to share his authority and continued to monitor all day-to-day activities, and employees were not encouraged to implement some interventions such as 5S and SMED.

Table 8.3 Comparison of cases in terms of intervention implementations

Intervention	**Firm A**		**Firm B**		**Firm C**		**Firm D**	
	Suggested	**Implemented**	**Suggested**	**Implemented**	**Suggested**	**Implemented**	**Suggested**	**Implemented**
Management Coaching	✓	☐	✓	✓	✓	☐	✓	✓
5S	✓	☐	✓	✓	✓	☐	✓	✓
SMED			✓	✓	✓	☐		
Organisation Structure Change/ Empowerment	✓	✓	✓	✓	✓	✗		
New Equipment					✓	✗		
Suggestion Scheme			✓	✓	✓	✓		
FIFO							✓	✓
Establishing Website	✓	✓	✓	✓			✓	✓
Customer Engagement	✓	☐			✓	✓	✓	✓
Collaboration	✓	☐	✓	✓	✓	✗	✓	✓
Training a CI Person					✓	✗		
Strategy Development	✓	✓	✓	✓			✓	✓
Delivery Improvement							✓	✓
Product Catalogue	✓	☐						
Showroom Improvement	✓	☐						
Using Social Media							✓	✗
CI training to all employees	✓	✓	✓	✓	✓	☐	✓	✓

✓ Implemented intervention ✗ Not implemented ☐ Partially implemented

Each firm exhibited different capability development during this research. There were similarities and differences in their capability development performance. For instance, learning capability in each firm was identified as being at a basic level and all interventions had an impact on learning capability. An improvement trend in learning capability was observed but it was too early to change the learning capability maturity level in the four firms. However, if this improvement trend were to be continuous, the

maturity level would increase in time. Employee participation increased at all three firms from basic to intermediate and continuously increased. Firm B faced some difficulties due to employees having the lowest educational background. It seems that the education level of employees prevents employees from contributing more to strategic activities. For empowerment capability, each firm performed differently. Firm A had the most significant change. The maturity level increased from basic to advanced at firm A. Firm B`s level also increased from intermediate to advanced. There were no observable changes in maturity at firms C and D. Firm D is a very small firm which employees one full-time and one part-time employee. Thus, empowerment development was not expected. Firm C`s owner did not want to share his authority with anyone and does not trust his employees; thus, he did not implement certain interventions and, as a result of this, empowerment capability did not change at Firm C. Firms performed similarly in strategy development and implementation capability. Firm A, B and D increased strategy development capability maturity level from basic to advanced while Firm D's owner did not focus on strategic activities during the nine months of observation. Thus, there was no change in maturity level at Firm D. On the other hand, maturity level of strategy development did increase from basic to intermediate for all four firms. Continuous improvement capability also developed in all four firms at different levels. There are five different areas in continuous improvement capability and the firms performed differently in each area. The average improvements are represented in Figure 8.3. Firm A`s maturity level increased from basic to almost advanced. Firm B`s maturity level increased from basic to advanced. Firm C and D`s maturity levels increased from basic to intermediate. The maturity level of decision-making capability only increased in Firm B from intermediate to advanced. Improvement trends were observed in Firm A and D but it was not enough to change maturity level. There was no change in decision-making maturity level in Firm C. Marketing and sales capability was developed in all four firms. Firm A, B and D`s maturity levels increased from basic to advanced. Furthermore, Firm C`s maturity level increased from intermediate to advanced. Maturity level of innovation and product development capability did not change in any of the firms. However, it was observed that interventions had a positive influence and innovation and product development capability is expected to develop in the long term. Environment-scanning capability was developed in the four firms. Firm A and D`s maturity levels increased from basic to intermediate, whereas firm B and C`s maturity levels increased from intermediate to advanced. The maturity levels of

imitation capabilities did not change in any of the four firms. Networking and collaboration capability increased in firms A, B and D but not firm C. Firm A improved maturity level of networking and collaboration capability from basic to advanced and Firm B and D increased from intermediate to advanced.

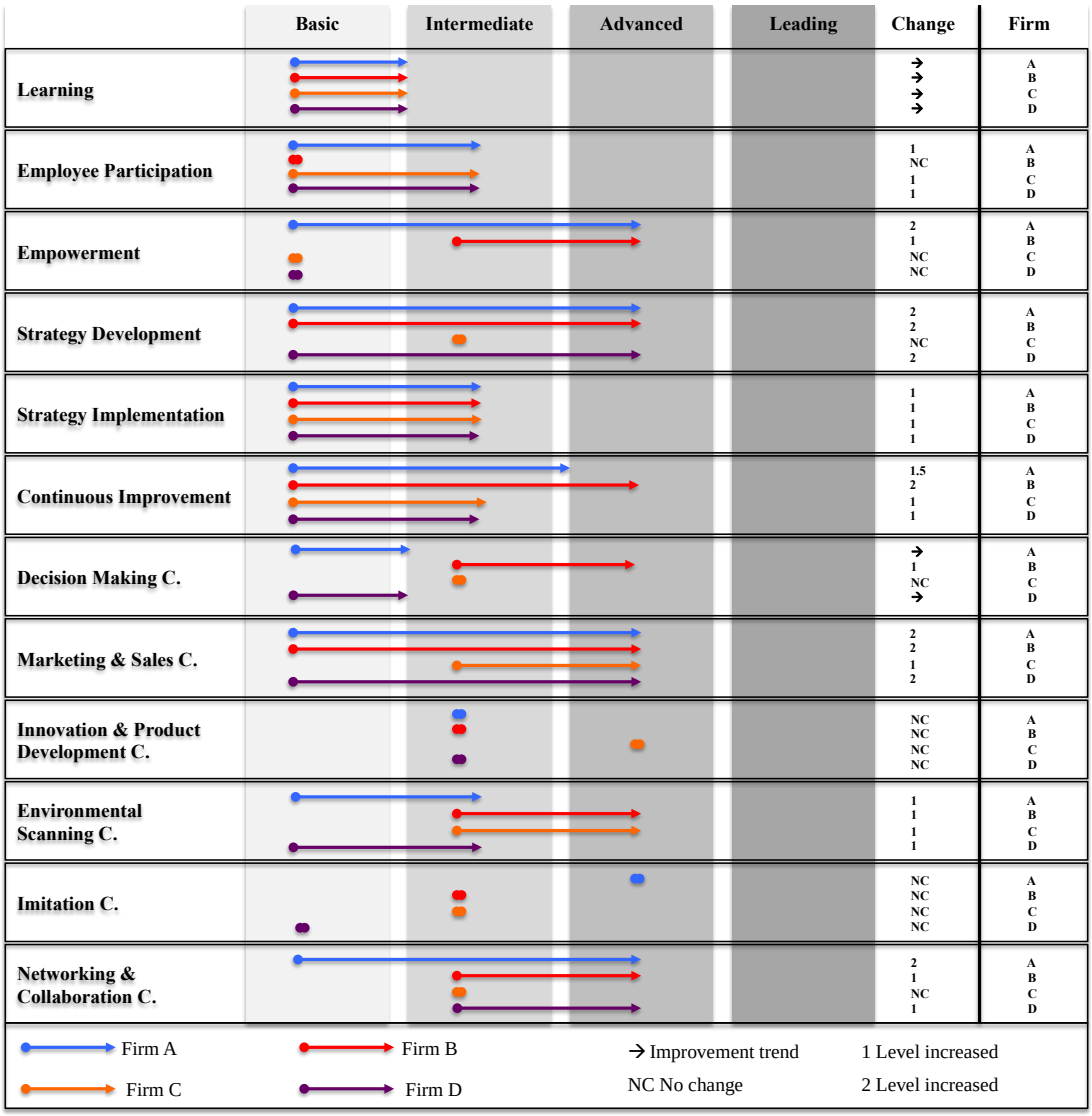

Figure 8.3 Comparison of maturity level differences before and after intervention

Relationships between capabilities are identified in Table 8.4. It can be stated that if the relationship between capabilities is identified and/or observed in four firms, there is a strong cause and effect between capabilities. If relationships are identified and/or observed in three firms, it can be considered that there is a cause and effect. If relationships are identified and/or observed at two firms, it can be suggested there is a cause and effect but more research is required for clarification. If relationships between capabilities are identified and/or observed at only one firm, it can be considered either as a coincidence or that sectoral differences might be the cause. It can be suggested that there are strong relationships between learning and all other capabilities. Learning capability is vital for sustainable capability development for each capability. Thus, relationships between learning and all other capabilities are identified in the four firms. Furthermore, other relationships are observed in the four firms. For example, employee participation has a positive impact on the development of continuous improvement; innovation and product development capability contributes to marketing and sales capability development; environment-scanning has a positive impact on innovation and product development capability; networking and collaboration capability contributes to both innovation and product development, and marketing and sales capabilities. Relationships were identified at three firms; these included employee participation which contributes to the development of both empowerment and environment-scanning capability; strategy development and implementation capability which has a positive impact on the development of both decision-making and marketing and sales capabilities; and networking and collaboration capability which contributes to the development of environment-scanning capability. In addition, certain relationships were only observed at two firms such as employee participation which contributes to the development of learning, strategy and implementation capabilities; empowerment which has a positive impact on strategy development and implementation, and decision-making capabilities; environment-scanning capability which contributes to the development of marketing and sales capability. Finally, some relationships were only observed in one firm such as empowerment which contributes the development of continuous improvement, marketing and sales, and innovation and product development capabilities.

Table 8.4 Cause and effect relationship between capabilities

	Learning	Employee Participation	Empowerment	Continuous Improvement	Development & Implementation	Decision-making C.	Marketing & Sales C.	Product	Environment-scanning C.	Imitation C.	Networking & Collaboration C
Learning	NA	A, B C, D	A, B C, D	A, B C, D	A, B C, D	A, B C, D	A, B C, D	A, B C, D	A, B C, D	A, B C, D	A, B C, D
Employee Participation	B, C	NA	A, B C,	A, B C, D	B, C,		C,	C,	A, B C,		
Empowerment	A	A, B, C,	NA	A,	A, C,	A, B,	A,	C,	A, B C		A, C
Continuous Improvement				NA	C,		B, C D	C,	C,	A,	
Strategy Development & Implementation C.					NA	A, B D	A, C D	C,			C,
Decision-making C.						NA					
Marketing & Sales C.							NA				
Innovation & Product Development C.							A, B C. D	NA			
Environment- scanning C.							C, D	A, B C, D	NA	A,	A, B, D
Imitation C.							A, B			NA	
Networking & Collaboration C.							A, B C, D	A, B C, D	A, B, C		NA

Identified in four firms

Identified in three firms

Identified in two firms

Identified in one firm

8.2 Findings

As a result of within-case and cross-case analyses, the findings are represented in this section. Organisational capabilities are divided into three groups in the theoretical framework and are discussed below.

8.2.1 Foundation Level Capabilities

Learning capability is a core routine for capability development. However, it is not well developed in micro enterprises. It can be suggested that micro enterprise owners ignore the possible contribution of employees for organisational learning. Thus, it is essential to encourage learning at the individual and group level. Although, within nine months, there was no change in maturity level of learning capability at any firm, apparent development trends in learning capability was observed in all firms. For instance, employees at firm A were more motivated to learn and explore new materials and equipment and employees at firm C were more open for new ideas. It can be suggested that certain interventions had a positive impact on the development of learning capability such as a suggestion scheme, management coaching, 5S, and customer engagemenr. In addition, capabilities evolve simultaneously in micro enterprises. For example, it is observed in some firms that empowerment and employee participation contribute to the development of learning capability in micro enterprises. As a result, learning capability can be developed by encouraging individual learning and sharing knowledge within the organisation, motivating and recognising employees' value within the organisation.

Employee participation appears not to be developed in micro enterprises during the first diagnostic and it is an essential capability for developing higher-level capabilities. It is observed that employees were not asked to contribute to improvement and strategic activities. Thus, employees were only concerned with their own activities and did not participant beyond their expected tasks. Interventions were designed to improve employee participation at firms such as a management coaching intervention designed to explain the importance of possible employee contribution to process and product improvement, defining new roles and changing organisation structure and 5S, SMED and continuous improvement training. Firms A, C and D underwent similar improvements in employee participation where the maturity level increased from basic to intermediate. It can be suggested that such intervention has a positive impact on this

development. Furthermore, learning and empowerment capabilities contribute to the development of employee participation capability in micro enterprises. For instance, firm A changed its organisational structure and created a new operations manager role for its most experienced employee where the owner delegated his authority; this change encouraged other employees` performance and learning. As a result, employee participation is substantial for the development of other organisational capabilities in micro enterprises and employee participation can be developed by encouraging employees to be involved in improvement and decision-making activities, sharing strategy with employees and leading them to consistent goals, and creating a psychologically safe business environment. Development in learning and empowerment capabilities contributes to the development of employee participation as well.

Empowerment is another essential capability for the development of other capabilities although it is usually not well developed in micro enterprises. It is observed that some micro enterprises (firm A, B, C) were not able to develop their empowerment capability. Thus, interventions were designed to improve empowerment capability in each firm such as organisation structure change and employee training. The maturity level increased from basic to advanced at firm A, and from intermediate to advanced at firm B. For instance, firm A changed the organisation structure, the consequence of which was that the owner has more slack time for strategic activities such as searching new trends in the furniture industry and visiting other businesses for networking activities. Furthermore, it is observed that learning and employee participation contribute to the development of empowerment. For instance, the manager of firm C did not like to share his authority with any employees and no-one is willing to participate. On the other hand, the owner of firm A could delegate his authority with his most experienced and learning-oriented employee and the maturity level of empowerment improved at firm A while it did not change at firm C. Consequently, firm managers/owners should understand the benefit of focusing on strategic activities more than daily operational activities; employees should develop personal skills and request more roles from management to develop the empowerment capability. Furthermore, improving learning and employee participation capability contributes to the development of empowerment.

8.2.2 Operational Capabilities

Continuous improvement capability plays a vital role in micro enterprises. Micro enterprises have limited resources and it is essential to manage those resources efficiently. However, many micro enterprises were faced with low productivity problems. Certain interventions were suggested for developing the continuous improvement capability in all four firms such as CI training, 5S, SMED, FIFO, new equipment and suggestion schemes. The maturity levels then increased in each firm. For instance, it increased from basic to almost advanced at firm A, from basic to advanced at firm B, and from basic to intermediate at firms C and D. Interventions such as 5S, CI, and SMED training created awareness of reducing waste in operations and employees were motivated by interventions such as suggestion schemes to develop and share improvement ideas. It is observed that managers play an important role to encourage, motivate and monitor employees` contribution to improvement activities. For example, the manager of firm B encouraged and monitored employees to develop and share improvement ideas. Employees` educational background and attitudes against new ideas may create some difficulties as well. For instance, firm C has employees that are primary school graduates and they show more resilience against change than high school or college graduates. In addition, it is observed that certain capabilities contribute to the development of continuous improvement capability such as learning, employee participation and empowerment. Employee participation enables more employees to share their ideas and encourage them to develop more ideas. The positive impact of empowerment on continuous improvement capability is observed at firm A. After the owner shared his authority, this change encouraged all other employees to become more motivated compared to the other three firms` employees. As a result, it can be suggested that micro enterprises can develop continuous improvement capabilities by encouraging idea generation and sharing, rewarding employees` contributions and motivating them. In addition, development in learning, employee participation and empowerment capabilities can contribute to the development of continuous improvement capability.

Strategy development and implementation capability is one of the key capabilities for creating sustainable business. It is divided into the two dimensions of strategy development and strategy implementation. As can be seen in the data strategy development and implementation capabilities were not established in the micro

enterprises. Interventions were designed to develop strategy and implementation capabilities at each firm. For instance, the maturity level of strategy development increased from basic to advanced at firm A, B, and D. Furthermore, the maturity level of strategy implementation increased from basic to intermediate at the four firms. It is monitored that owners/managers spent more time to develop strategies and shared the strategies with their employees. For instance, the manager of firm C could not focus on developing strategies for each level as he was busy monitoring day-to-day activities within the firm. Thus, it is essential that owners/managers of micro enterprises should create slack time for strategic level activities. Furthermore, it is observed that learning, employee participation and empowerment capabilities have a positive impact on strategy development and implementation. Employee participation enables successful implementation of new strategies. Moreover, empowerment creates more slack time for managers/owners to focus on strategy development activities. As a result, it can be stated that micro enterprises` managers/owners should create slack time for strategy development activities and should share strategies with employees to motivate them towards the same targets. Development in learning, empowerment and employee participation capabilities will also contribute to strategy development and implementation capability.

8.2.3 Dynamic Capabilities

Decision-making capability, a well-established decision-making process, reduces the risk of mistakes. Making wrong decisions can cost micro enterprises more due to the lack of resources for recovery. Thus, it is important for micro enterprises to develop decision-making capabilities. The maturity levels of decision-making capabilities are identified differently in each firm such as basic at firm A and D, and intermediate at firms B and C. Interventions such as developing strategies and management coaching make a positive contribution to the development of decision-making capabilities. For instance, the maturity level of decision-making capability increased at firm A from basic to intermediate, and at firm B from intermediate to advanced. Developing strategies enables owners/managers to prioritise issues and reduce time spent making decisions. Also, employees are able to make operational decisions without any confirmation from owners/managers. Furthermore, when more people are involved in the decision-making process, it can be considered from different perspectives and reduce the risk of making bad decisions. Although, involvement can produce different

alternatives, it can cause delays and missed opportunities. Thus, it is significant to develop decision-making processes to balance involvement and speed. Moreover, certain capabilities also contribute to decision-making capability such as learning, strategy development and implementation, and empowerment. It is observed at firms A and B that development of empowerment contributed to the development of decision-making capability. For instance, employees at firm A called the owner/manager to obtain his confirmation for simple daily purchases. This changed after the restructure of the organisation. Moreover, it was observed at firms A, B, and D that strategy development and implementation contributes to the development of the decision-making capability. For example, defining target markets for firm D enabled the firm to choose the right products and channels and made decision-making easier. As a result, it can be suggested that developing strategies and clarifying priorities, creating slack time to collect the required information, encouraging employees and stakeholders to share their views and, finally, developing decision-making processes at different levels can enable micro firms to develop the decision making capability. Moreover, it is observed that development in learning, strategy development and implementation, and empowerment capabilities contributes to the development of decision-making capability in micro enterprises.

A strong marketing and sales capability is important in order to create a large and loyal customer base. However, most of the micro enterprises did not have any marketing strategy other than waiting for customers. Thus, interventions were designed and implemented in each firm such as developing customer engagement and a marketing strategy, establishing websites, and collaborating with other businesses. After implementation of certain interventions the maturity level of marketing and sales capability increased from basic to advanced at firms A, B and D, and from intermediate to advanced at firm C. For instance, firm A had a reputation for high quality products but it was only known by relatives and friends. Thus, they had limited potential for customers. After developing a marketing strategy, they began to have customers from other business who had obtained their brochure or searched online. Conversely, firm C were facing different problems; they were already very well-known in the local market but their marketing team was offering more complex products with multiple colours to attract customers. However, this cost more and customers did not want to pay more. They changed their attitude by explaining their costs to customers and increased

customer satisfaction by reducing their costs. Certain capabilities also contribute to the development of marketing and sales capability such as learning, employee participation, empowerment, continuous improvement, strategy development and implementation, innovation and product development, environment-scanning, imitation, networking and collaboration. The contribution of networking and collaboration, innovation and product development, and learning capabilities were observed in all four firms. For instance, in each enterprise, their friends and relatives were their first customers; by using their network they could access more customers. As a result, it can be suggested that developing marketing strategies, understanding customers` needs and sharing more information with customers contributes to the development of marketing and sales capability in micro enterprises. Furthermore, it can be stated that developing certain organisational capabilities such as networking and collaboration, innovation and product development, and strategy development and implementation have a positive impact on the development of marketing and sales capability.

Innovation and product development capability is substantial for maintaining market position and attracting new customers. Many micro enterprises have financial constraints when investing in new product development. Thus, they usually find innovative solutions based on local customers` needs. The maturity levels of innovation capability were identified as being intermediate at firms A, B and D and advanced at firm C. Certain interventions were designed to improve innovation and product development capability such as customer engagement, management coaching, collaboration with other organisations and purchasing new equipment. No change was observed in maturity at firms A, C and D. However, firm B`s maturity level increased from intermediate to advanced. For example, it is observed that firms A, C and D could not introduce any new product but firm B began to develop a new product by obtaining funding support and purchasing new machines. Furthermore, certain capabilities have a positive impact on development of innovation and product development capability such as networking and collaboration, and environment-scanning capabilities. For example, firm B developed many products by working with support organisations and a local university. As a result, it can be suggested that micro enterprises can develop their innovation and product development capability by identifying product differentiation opportunities, understanding different customer needs, and improving production capability by collaborating with other organisations or purchasing new machines.

Furthermore, development of learning, networking and collaboration, and environment-scanning capabilities can have a positive impact on innovation and product development capability.

Imitation capability is another capability that creates new opportunities for micro enterprises. Product development investments are very limited in micro enterprises and they usually follow big companies to understand trends in the marketplace. Firms which can produce similar products more quickly and at a lower cost take advantage in the marketplace. In the diagnosis, imitation capability was identified as advanced at firm A, intermediate at firms B and C, and basic at firm D. Imitation capability is found only relevant in firm A due to sector. No specific intervention was designed to improve imitation capability. However, it is observed that continuous improvement and environment-scanning capabilities have a direct impact on imitation capability. For example, finding new furniture models earlier than a competitor is significant and the ability to produce furniture at low cost is important. As a result, it can be suggested that micro enterprises should reduce cost, improve production capability and increase scanning activities to develop imitation capability. Furthermore, development of continuous improvement and environment-scanning capability can contribute to the development of imitation capability.

Environment-scanning capability is essential to identify internal and external opportunities and threats. Environment-scanning capability is not well developed in many micro enterprises. Thus, certain interventions were suggested to firms such as developing collaboration with other organisations, suggestion schemes, and organisation structure change. The maturity levels of environment-scanning capability increased from basic to intermediate at firms A and D, and from intermediate to advanced at firms B and C. For example, the owner of firm A delegated and shared his authority with his employees and created slack time for scanning activities. In addition, it is identified that certain capabilities have a positive influence on the development of environmental capability such as empowerment, employee participation, continuous improvement, and networking and collaboration capabilities. For example, the networking and collaboration capability is more mature at firm B and they are able to learn funding opportunities before other firms. As a result, it can be suggested that encouraging employees to generate new ideas, delegating authority to employees and

creating slack time for owners/managers, and collaborating with other organisations contribute to the development of environment-scanning capability in micro enterprises. Moreover, development of learning, employee participation, empowerment and networking and collaboration capabilities contribute to the development of environmental capability.

Networking and collaboration capability can enable micro enterprises to access new knowledge and technologies. However, networking and collaboration capability is not developed in many micro enterprises. Thus, certain interventions were designed to develop networking and collaboration capability such as collaboration with GSOs and universities, and organisation structure change. For instance, firm A changed its organisation structure and created slack time for the owner/manager; thus, he was able to visit other businesses to develop relationships. Moreover, certain capabilities have a positive impact on the development of networking and collaboration capability such as empowerment, strategy development and implementation, and environment-scanning capabilities. As a result, it can be concluded that networking and collaboration capability can be developed by collaborating with GSOs and other businesses, and delegating authority to employees for creating slack time for the owner/manager. It was also found that environment-scanning capability, empowerment, strategy development and implementation capabilities contribute to the development of networking and collaboration capability.

8.2.4 Answering Research Questions

The development process of organisational capabilities and possible successful implementation of some interventions are identified in this research. Interventions that have a positive influence on the development of certain capabilities are represented in Table 8.5 and Table 8.6. For instance, Table 8.5 shows that I2, I3, I6, I9, I10, I11, I12 interventions contribute to the development of learning capability. On the other hand, Table 8.6 shows that management coaching intervention contributes to the development of C2, C3, C6, C7, C8 capabilities.

Table 8.5 Capabilities developed by interventions

Capabilities	**Code**	**Contribution of Interventions**
Learning	C1	I2, I3, I6, I9, I10, I11, I12
Empowerment	C2	I1, I4, I6, I11, I12
Employee Participation	C3	I1, I2. I3, I4, I6, I7, I11, I17
Continuous Improvement	C4	I2, I3, I5, I6, I7, I10, I11, I13, I17
Strategy Development and Implementation	C5	I12
Environment-scanning C.	C6	I1, I6, I9, I10
Innovation and Product Development C.	C7	I1, I5, I9, I10
Networking and Collaboration C.	C8	I1, I4, I9, I10
Decision-making C.	C9	I12
Marketing and Sales C.	C10	I8, I 10, I12, I14, I15
Imitation C.	C11	N/A

Table 8.6 Interventions that influence the development of capabilities

Interventions	**Code**	**Affected Capabilities**
Management Coaching	I1	C2, C3, C6, C7, C8
5S	I2	C1, C3, C4
SMED	I3	C1, C3, C4
Organisation Structure Change	I4	C2, C5, C6, C8
New Equipment	I5	C4
Suggestion Scheme	I6	C1, C2, C3, C4, C7
FIFO	I7	C3, C4
Establishing Website	I8	C10
Customer Engagement	I9	C1, C7, C8, C10
Collaboration	I10	C1, C6, C7, C8, C10
Training a CI person	I11	C1, C2, C3, C4
Strategy Development	I12	C1, C2, C5, C9, C10
Delivery Improvement	I13	C4, C10
Product Catalogue	I14	C10
Showroom Improvement	I15	C10
Using Social Media	I16	C10
CI Training to all Employees	I17	C1, C2, C3, C4

Table 8.7 shows capabilities with a positive impact on development of other capabilities. For instance, learning capability is identified as essential for the development of all capability development. Moreover, while learning, empowerment,

continuous improvement, strategy development and implementation, innovation and product development, networking and collaboration, and imitation contribute to the development of marketing and sales capability, marketing and sales capability does not contribute to the development of any other capability.

Table 8.7 Capabilities with positive impacts on other capabilities

Capabilities	**Code**	**Affected Capabilities**
Learning	C1	C2, C3, C4, C5, C6, C7, C8, C9, C10, C11
Empowerment	C2	C3, C4, C5, C6, C8, C9, C10
Employee Participation	C3	C1, C2, C4, C5, C6
Continuous Improvement	C4	C6, C7, C10, C11
Strategy Development and Implementation	C5	C7, C9, C10
Environment-scanning C.	C6	C7, C8, C11
Innovation and Product Development C.	C7	C10
Networking and Collaboration C.	C8	C6, C7, C10
Decision-making C.	C9	N/A
Marketing and Sales C.	C10	N/A
Imitation C.	C11	C10

Table 8.8 represents answers for research questions 4 and 5 for each capability. For instance, finding one (F1) is that learning capability can be developed by low cost training, encouraging employees in idea generation, and improving collaboration with other businesses and organisations.

Table 8.8 Summary of findings

Level	Capabilities	How do organisational capabilities develop in micro enterprises?	How do organisational capabilities affect each other in micro enterprises?
Foundation Level Capabilities	Learning	**F1** – Low cost employee training, encouraging employee idea generation and sharing, and improving collaboration with other businesses and organisations enable firms to develop learning capability in micro enterprises. *Interventions - I2, I3, I6, I9, I10, I11, I12*	**F12** – Delegating authority to employees encourages employees to explore and learn. Employee participation contributes to the development of learning by creating a knowledge sharing environment. *Capabilities – C3*
	Empowerment	**F2** –Developing an organisation structure where decision-making authority of day-to-day activities is delegated to employees. Encouraging employees to take more responsibility within the firm. Reward and recognition of employee skills and development. *Interventions - I1, I4, I6, I11, I12*	**F13** – Employee participation has a positive impact on empowerment. Employees who are willing to take more responsibility and contribute to the development of the firm encourage owner/manager to share authority with employees. *Capabilities – C1, C3*
	Employee Participation	**F3** – Encouraging and motivating employees for idea generation and sharing, rewarding and recognition of employee contribution. *Interventions - I1, I2. I3, I4, I6, I7, I11, I17*	**F14** – Employees who have more responsibilities generate and share more ideas. Empowerment contributes development of employee participation. *Capabilities – C1, C2*
Operational Capabilities	Continuous Improvement	**F4** – Short - low cost CI training, creating awareness of waste, establishing idea generation systems such as suggestion schemes, and encouraging and monitoring employees for CI activities. *Interventions - I2, I3, I5, I6, I7, I10, I11, I13, I17*	**F15** – Empowerment and employee participation contributes to the development of continuous improvement capability. Sharing authority with employees makes them feel they belong to the firm. Employee participation promotes a free environment for idea generating and sharing. *Capabilities – C1, C2, C3*

	Strategy Development and Implementation	**F5** – Fundamental training on strategy development enables micro enterprises to build and develop strategy development capability. Training should comprise strategy formulation, sharing strategies with employees, and identifying business priorities. *Interventions - I12*	**F16** – Owner/managers of micro enterprises cannot focus on strategic activities due to operational day-to-day activities. Thus, empowerment and employee participation can create slack time for owners to spend more time on strategic activities. *Capabilities – C1, C2, C3*
Dynamic Capabilities	Environment-scanning C.	**F6** – Creating slack time for owner/managers, encouraging idea generation withi employees, and increasing collaboration with other organisations. *Interventions – I1, I6, I9, I10*	**F17** – Employee participation increases the number of people involved with scanning activities in micro enterprises. Empowerment creates slack time for owners/managers for strategic activities and they can spend such time scanning new technologies, opportunities or threats. Networking and collaboration capability enables firms to access new information from different sources. *Capabilities – C1, C2, C3, C4, C8*
	Innovation and Product Development C.	**F7** – Developing customer engagement, increasing collaboration with other organisations. *Interventions – I1, I5, I9, I10*	**F18** – Idea generation is a key aspect of innovation and product development and environment-scanning, and networking and collaboration capabilities enable firms to identify opportunities and develop ideas. Well established continuous improvement culture also generates incremental ideas for products and/or processes. *Capabilities – C1, C4, C5, C6, C8*
	Networking and Collaboration C.	**F8** – Creating slack time for owner/manager, increasing collaboration with other organisations. *Interventions – I1, I4, I9, I10*	**F19** – Owners who share their authority are able to spend more time on networking activities. Empowerment contributes to the development of networking and collaboration capability. Identifying organisations for collaboration is important and environment-scanning capability enables firms to identify new collaboration opportunities. *Capabilities* – C1, C2, C6

	Decision-making C.	**F9** – Identifying priorities and goals, developing strategies and decision-making procedures. *Interventions – I12*	**F20** – Strategy development and implementation capability contributes to the development of decision-making capability by enabling employees to make day-to-day decisions. Empowerment also supports decision-making capability by creating slack time for owner/manager. *Capabilities* – C1, C2, C5
	Marketing and Sales C.	**F10** – Developing marketing strategy, collaboration with other organisations, being more visible, and developing customer engagement. *Interventions – I8, I 10, I12, I14, I15*	**F21** – Innovation and product development contributes to marketing and sales capability by increasing product range and quality. Continuous improvement capability promotes marketing and sales capability by improving service quality. Networking and collaboration capability enables firms to increase customer base. Strategy development and implementation provides marketing strategies. *Capabilities* – C1, C2, C4, C5, C7, C11
	Imitation C.	**F11** – No intervention is designed to test imitation capability. It is found that imitation capability develops through other capabilities. *Interventions – N/A*	**F24** – Continuous improvement capability reduces production costs. Environment-scanning capability identifies possible products that can be imitated. *Capabilities* – C1, C4, C6

8.3 Summary

In this chapter, cross-case analysis was conducted and research findings were identified. Cross-case analysis began with identifying differences between each firm and outlining their characteristics before implementation of any intervention. These differences enabled the author to understand why some firms were able to implement interventions and others could not. Moreover, issues that were identified in the first diagnostic and their final situation after implementation of interventions were represented. Finally, a cause and effect relationship between capabilities was represented in a matrix to identify strong cause and effect relationships between capabilities. As a result of within- and cross-case data analyses, the findings were represented for each capability area.

9 DISCUSSION AND CONCLUSION

In this chapter, research outcomes are represented and discussed how findings fit in the literature. Thus, research objectives are outlined at first and contribution of research is discussed at following sections.

9.1 Review of Research Objectives and Contributions

In organisational capabilities literature, theories developed in the context of large enterprises. Researchers mainly focused on large enterprises and more research is conducted based on the increase of recognition of SMEs. However, Micro enterprises are neglected for various reasons such as data collection difficulties, lack of funding and high number of sample sizes. In this research, it is aimed to understand the development of organisational capabilities in micro enterprises. In current literature, there is no research on organisational capabilities in the context of micro enterprises. Hence, a research question is formulated as follow;

RQ 1: Are organisational capability theories relevant to micro enterprises?

The answer of the first research question is initially answered from literature. Organisational capabilities enable firms to gain competitive advantage and micro enterprises also require organisational capabilities to gain competitive advantage. Thus, organisational capabilities appear to be relevant to micro enterprises. However, another question arises as follow;

RQ 2: What makes Micro Enterprises different than Small and Medium, and Large enterprises?

This question is developed to understand if there are any differences between small-medium sized enterprises and micro enterprises, how micro enterprises are different than others. There is significant amount of research which emphasize differences between SMEs and large enterprises (Garengo et al., 2011; Ates, 2013; Cagliano and Spina, 2002; Matten and Moon, 2004; Wessel and Burcher, 2004; Lee and Oakes, 1995; Ghobadian and Gallear, 1996; McAdam, 2000; Youssef et al., 2002; Deros et al., 2006). Even though micro enterprises are included in the definition of SMEs, many research exclude firms which have less than 20 employees (Everaert et al., 2007; Teirlinck and Spithoven, 2013; Voudoris et al., 2012; Branzei and Vertinsky, 2006) for various

reasons. Thus, an initial empirical research is conducted and combined with literature to answer RQ-2 as Chapter 3 illustrates.

It is a vital question to answer to continue further research. As differences between micro enterprises and other enterprises outlined in chapter 3, it can be concluded that organisational capability theories are relevant to micro enterprises but not all of them. Differences between micro enterprises, and SMEs, and large enterprises show that micro enterprises do have limited resources and some organisational capabilities (such as R&D capability) cannot be developed in most micro enterprises. Thus, a conceptual framework is developed for micro enterprises and following research questions are designed;

RQ 3 Is the conceptual model relevant to Micro enterprises?

RQ 4 How do organisational capabilities develop in micro enterprises?

RQ 5 How do organisational capabilities affect each other in micro enterprises?

Answers of these research questions are represented at Chapter 5, 6, and 7.

This research contributes to the field of organisational capability theories in five areas. *First*, it demonstrates that the organisational capability theories are relevant to micro enterprises. This conclusion is based on literature review and empirical research. The literature emphasises that organisational capabilities are the source of competitive advantages (Nelson and Winter, 1982; Teece and Pisano, 1994; Barney, 1991; Amit & Schoemaker, 1993) and micro enterprises also need to gain competitive advantage. Empirical research demonstrates that micro enterprises also develop capabilities. This conceptually, organisational capabilities are found relevant for micro enterprises. *Second*, it defines the differences between micro enterprises and SMEs and Large enterprises. Previous literature (Lawson and Samson, 2001; Liao et al, 2003; Garengo and Bernardi, 2007; Merrilees et al., 2011) mainly focusses on differences between SMEs and large enterprises with virtually no discussion of micro enterprises. Thus, differences between micro enterprises and others could not be derived from literature and an empirical research is conducted to define characteristics of micro enterprises. In Chapter 3, differences between micro enterprises and SMEs and Large enterprises are demonstrated and it is concluded that micro enterprises are different in areas such as very limited resources, local competition, lack of strategy and day-to-day management

approaches from SMEs and Large enterprises. *Third*, it develops an integrated model of organisational capabilities which introduces foundation level capabilities and integrates these with operational and dynamic capabilities as well as the organisational performance outcomes. *Fourth*, it develops an organisational capability framework that would be more relevant to needs of the micro enterprises. *Fifth*, it outlines how organisational capabilities develop in micro enterprises. Particularly, it demonstrates the relationships between interventions and capabilities as well as between capabilities. The following section will engage in more detailed discussion on third, fourth and fifth contributions.

9.2 Discussion

In relation to the third contribution, there are different categorisations of organisational capabilities in literature (Collis, 1994; Winter, 2003; Zahra et al., 2006; Ambrosini et al., 2009) but they are not linked to each other and sustainable business performance. Foundation level capabilities are more than Collis`s (1994) first category or Winter`s (2003) zero level capabilities as foundation level capabilities include organisational learning and organisational culture. Learning capability is identified as routine to develop organisational capabilities (Ambrosini and Bowman, 2009; Helfat, 2004). However, some authors claim that learning capability/organisational learning is a type of dynamic capability (Eisenhardt and Martin, 2000: Teece et al., 1997). In this research, learning is identified as essential for the development of organisational capabilities. In addition, organisational culture, it is essential to create a culture that promotes learning and innovation for the development of organisational capabilities and it is often seen as the primary cause for the failure of implementing organisational change program (Linnenluecke and Griffiths, 2010). Foundation level capabilities have critical role in develop further organisational – dynamic and operational – capabilities. In literature, Dynamic capabilities are defined as higher level capabilities because of the change (Winter, 2003). However, Helfat (2004) states that separation between operational and dynamic capabilities cannot be made due to change exist at incremental or radical levels in all operations. Hence, operational and dynamic capabilities are located at the same level in this research. Finally, organisational capabilities are linked to sustainable business performance. In current literature, organisational capabilities are seen as a source of competitive advantage and sustainability (Nelson and Winter, 1982; Teece and Pisano, 1994; Barney, 1991; Amit & Schoemaker, 1993; Teece et al., 1997)

but the concepts and frameworks (Eisenhartd and Martin, 2000; Verona and Ravasi, 2003; Zott, 2003; Wang and Ahmed, 2007; Teece, 2007) do not represent an integrated model. *This research contributes organisational capabilities literature by developing an integrated model of organisational capabilities.*

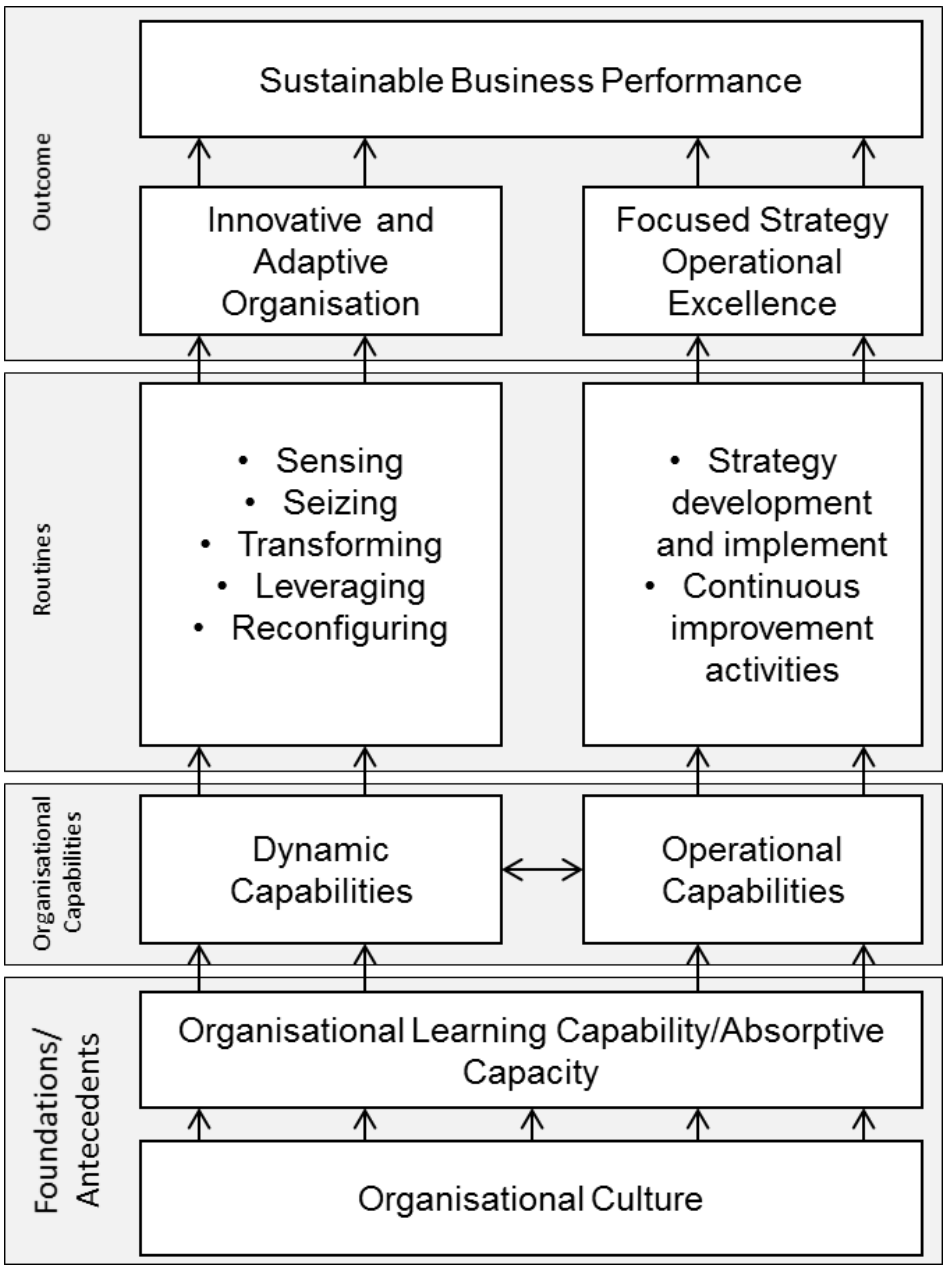

Figure 9.1 An integrated model of organisational capabilities

Concerning the fourth contribution, it is identified that micro enterprises are different than SMEs and Large enterprises and it cannot be expected that micro enterprises will develop same organisational capabilities as SMEs and Large enterprises develop. In this research, a conceptual framework, which would be more relevant to needs of the micro

enterprises, is developed. Six different types of dynamic and two different operational capabilities are found relevant to traditional micro manufacturing enterprises as Figure 9.2 illustrates.

In literature, concepts are identified to improve operational excellence such as lean manufacturing, TQM, TPM, JIT, etc. which are considered as operational capabilities. These concepts require high-cost training and skilled employees, strong management and leadership skills, and long term planning (Powell, 1995; Bhadury, 2000; Ahuja and Khamba, 2008; Bessant et al., 1997; Antony and Banuelas, 2002). Thus, micro enterprises may not build these routines. However, they can still develop continuous improvement capability as continuous improvement activities do not always require high cost and educated employees. Hence, continuous improvement capability is found relevant to micro manufacturing firms. Additionally, strategy development and implementation capability are key for business success in the long term (Garcia-Morales et al., 2006; Bititci, 2015). There are strong evidence that many micro enterprises do not have any mid or long term strategy and it is found relevant to micro enterprises. Moreover, Teece et al. (1997) suggest that a path dependency is essential for the development of capabilities and for this reason strategy development and implementation capability is considered an operational capability in this research.

Authors suggest different types of dynamic capabilities in literature such as R&D, innovation, process development, product development, environmental scanning, networking, decision making, alliancing/collaborating, imitation/replication, knowledge development/learning and marketing capabilities (Easterby-Smith et al., 2009: Teece et al., 1997; Eisenhardt and Martin, 2000: Zott, 2000; Bruni and Verona, 2009). Decentralisation and resource structure of large enterprises enable them to create focused departments to create expertise and knowledge but micro enterprises have limited resources to develop all these dynamic capabilities. Hence, it is found that all these capabilities are not applicable in micro enterprises. Although, most dynamic capabilities cannot be developed in micro enterprises as they are in large enterprises and SMEs. Micro enterprises develop the different version of these capabilities within their business environment. Six dynamic capabilities are defined for micro enterprises in this research as networking and collaboration, environmental scanning, innovation and

product development, imitation/replication, marketing and sales, and decision-making capabilities.

Firstly, networking and collaboration capability provides opportunities to firms for accessing new knowledge, new markets, and new funding opportunities (Powell et al., 1996; Walker et al., 1997). Networking and collaboration capability includes collaboration, alliancing and networking activities in Micro enterprises. It is observed that owner/manager of micro enterprises do networking and collaboration activities which may be different level but networking and collaboration capability is one of the essential dynamic capability for sustainable business performance in micro enterprises. Findings show that micro enterprises that develop networking and collaboration capabilities perform better in marketing, innovation and production capability areas. Thus, networking and collaboration capability is found relevant to micro enterprises to achieve sustainable business performance. In addition, innovation and product development capability enables firms to incrementally innovate its products and processes. In large enterprises, different departments develop process development, product development, and innovation capabilities. In micro enterprises, there are not dedicated resources to focus on developing new products and processes. However, it is observed that micro enterprises can still innovate its processes and products. Thus, innovation and product development capability is found relevant to micro enterprises and defined as the combination of product development, process development, and innovation capabilities in this research. Furthermore, environmental scanning capability enables firms to sense opportunities or threads within the business market. In micro enterprises, employees and owners/managers can do scanning and data collection activities. It is observed that environmental scanning capability is relevant to micro enterprises. Moreover, decision making capability is another dynamic capability that is found relevant to micro enterprises. In addition, all businesses have marketing and sales activities and micro enterprises also develop marketing and sales capability. Finally, in this research setting, micro enterprises are chosen from different industries and imitation/replication capability is found relevant to micro enterprises based on their sectors. Micro enterprises require imitation/replication capability in fashion such as clothes, textile, furniture etc. Reconfiguration capability is proposed to be relevant to Micro enterprises at Chapter 3 in conceptual framework. However, no evidence are found to support this proposition. It might be found relevant in other micro enterprises

but there is no evidence to claim reconfiguration capability is relevant to micro enterprises in this research. In conclusion, six dynamic capabilities found relevant to traditional micro manufacturing enterprises as Figure 9.2 illustrates.

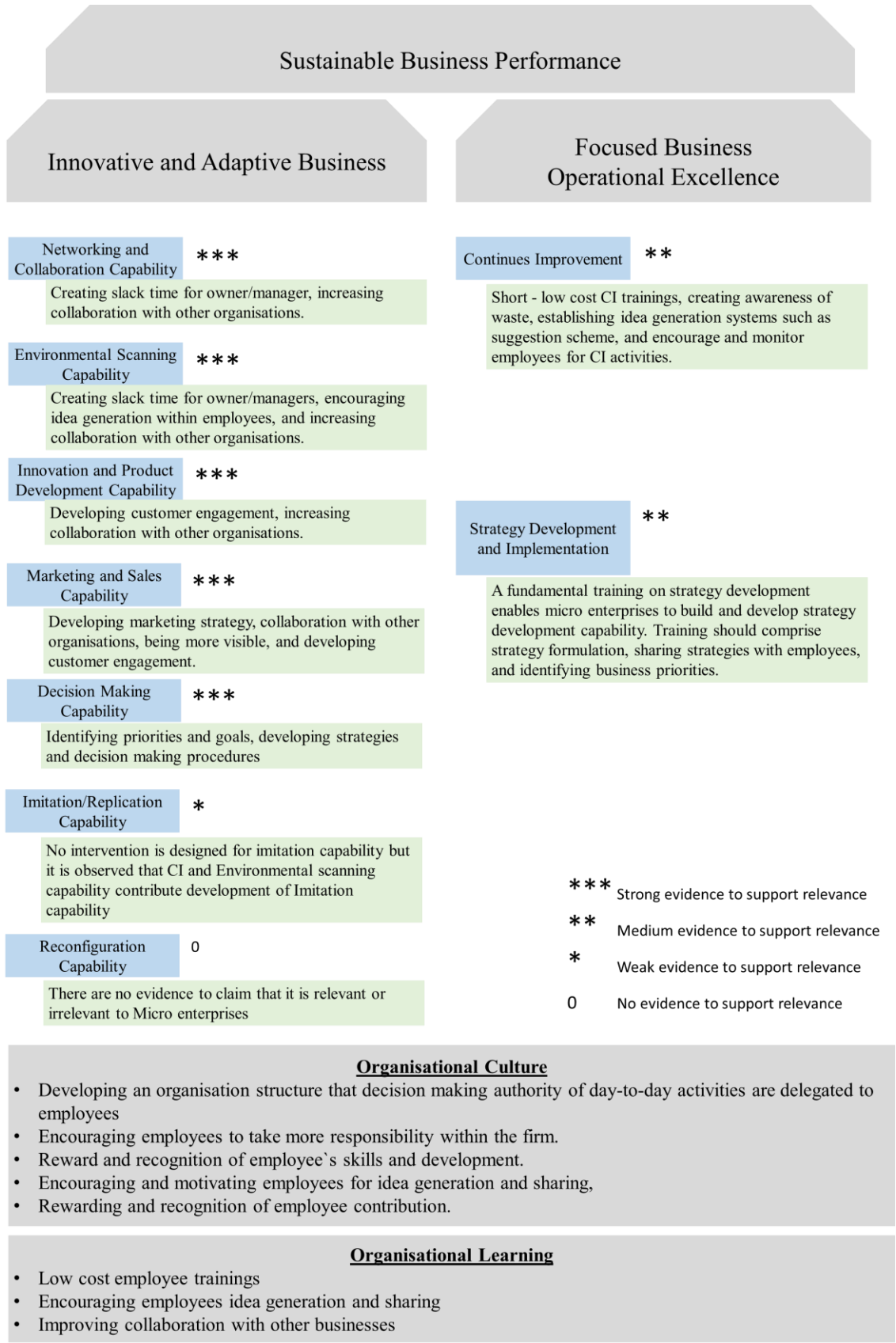

Figure 9.2 Final version of conceptual framework.

The fifth contribution of this research is that this research outlines how organisational capabilities develop in micro enterprises. Particularly, it demonstrates the relationships between interventions and capabilities as well as between capabilities. Following paragraphs will engage in more detailed discussion on final contribution.

Organisations can generate knowledge externally by developing acquisition and assimilation processes such as knowledge transfer, merging, networking, collaboration and acquisition (Cohen and Levinthal, 1990; Zahra and George, 2002; Levitt and March, 1993, Jerez-Gomez et al, 2005; Zollo and Winter, 2002) and internally by developing transformation and exploitation processes such as problem solving, R&D, knowledge sharing, experimentation (Cohen and Levinthal, 1990; Zollo and Winter, 2002; Zahra and George, 2002; Goh and Richard, 1997). Findings demonstrate that short and low-cost training, encouraging employees for idea generation and knowledge sharing, participative culture, collaborating with other businesses and organisations contributes the development of learning capability in micro enterprises. Findings confirm current literature on development of learning capability to some extent such as encouraging employees for idea generation and knowledge sharing, employee participation, and collaboration but it contradicts current literature on some practices such as R&D, mergers or acquisition, know-how agreements, high-cost employee training, which are not relevant/applicable to micro enterprises due to lack of skilled employees and, financial constraints. However, current literature on learning capability is extended by identifying (a) continuous improvement training, suggestion scheme, customer engagement, collaboration, and strategy development interventions and (b) employee participation capability that contribute the development of learning capability in micro enterprises.

Organisational culture is seen an important element for success or failure of change (Ulrich et al., 1993; Jerez-Gomez et al., 2005). Organisations require a strategy that is known by all employees, a structure that gives freedom and flexibility to employees, a support mechanism, behaviours that encourage innovation, and open communication to create a culture that promotes innovation and learning (House et al, 2002; Schein, 1996; Martin and Terblance. 2003). In this research, two main areas are identified that prevent organisations to develop organisational culture. Empowerment and employee participation are identified issues that prevent micro enterprises to achieve an

organisational culture that promotes learning and innovation. Empowerment is defined as delegating authority and decision-making power (Cakar and Erturk, 2010). It is seen critical for organisational innovativeness and effectiveness (Gomez and Rosen, 2001). Spreitzer (1995) suggests that empowerment consists of an individual's judgment of meaning (i.e., the value of his or her work), competence (i.e., his or her capability to perform the work), self-determination (i.e., choice in initiating and regulating actions), and impact (the ability to effect or influence organizational outcomes). Findings illustrate that employee empowerment can be improved by developing trust between owner and employees. Employees, who are willing to get more responsibilities, self-motivated and more experienced, enable owners/managers to delegate power. In addition, employee participation capability promotes empowerment capability in micro enterprises by developing trust between employees and owners. Findings confirm the current literature on how to solve empowerment problem but also extend the current literature by identifying (a) management coaching, organisation structure change, suggestion scheme, continuous improvement training and strategy development interventions and (b) learning and employee participation capabilities that solve empowerment problem in micro enterprises. Employee participation is another issue that prevents micro enterprises from achieving ideal organisational culture. Processes that increase employee participation are seen as suitable and effective ways to increase the competitiveness of firms (Ben-Ner and Jones, 1995; Godard and Delaney, 2000; Black and Lynch, 2001; Zwick 2004). There are different initiatives that are identified to increase employee participation in current literature. The most commonly used employee participation processes are quality circles, task forces, quality improvement teams, suggestion programs, and training in participation (Lawler, 1993; Lawler et al., 1992). Findings demonstrate that employee participation can be increased in micro enterprises by encouraging idea generating and sharing, reward and recognition, and creating a free environment that employees are able to share their ideas without any fear or shame. Findings confirm the current literature on the development of employee participation but also extend the current literature by identifying (a) management coaching, continuous improvement training interventions and (b) learning and empowerment capabilities that enable micro enterprises to increase employee participation. In conclusion, micro enterprises can create an organisational culture that promotes learning and innovation by solving empowerment issue and increasing employee participation. Findings confirm the current literature on the development of

organisational culture but also extend the literature by identifying key determinants – empowerment and employee participation – to achieve an organisational culture that contributes the development of organisational capabilities in Micro enterprises.

Operational capabilities enable a firm to perform an activity on an on-going basis using more or less the same techniques on the same scale to support existing products and services for the same customer population (Helfat and Winter, 2011). Different types of operational capabilities are identified to increase operational excellence and develop strategies in literature as conceptual framework represent. Continuous improvement capability and strategy development and implementation capability are found relevant to micro enterprises. Continuous improvement capability is defined as a collection of problem-solving activities in this research.

Continuous improvement capability is defined as an organisation-wide process of focused and sustained incremental innovation (Bessant and Francis, 1999). Continuous improvement capability enables firms to reduce operation costs and improve quality and productivity. In literature, different mechanisms are suggested to develop continuous improvement capability as training in problem solving process, continuous improvement tools and techniques, developing processes such a quality circles to enact continuous improvement, development of an idea management system to receive and respond to ideas, development of reward and recognition system (Lillrank and Kano, 1990; Dale, 1995; Berger, 1997; Kobayashi, 1990; Rickards, 1998; Schuring and Luijten, 1998; Bessant and Francis, 1999). Findings demonstrate that continuous improvement capability can be developed by creating waste and improvement awareness by training employees, encouraging idea generating and knowledge sharing, reward and recognition of employee contributions. The training must be adjusted for micro enterprises such as low cost, short and simplified. Findings confirm the current literature as well as extent the literature by identifying (a) continuous improvement training, suggestion scheme, collaboration interventions and (b) learning, empowerment, employee participation capabilities to develop continuous improvement capability in Micro enterprises.

Strategy development and implementation capability can be divided into two stage as development and implementation of strategies. In literature, different strategy

development processes are developed and these processes include various well-defined steps as data collection and analysis, strategy development, evaluation, selection and implementation (Feurer and Chaharbaghi, 1995). In addition, implementation is defined as the managerial interventions that align organisational action with a strategic intention (Floyd and Woolridge, 1992). Initial diagnostics showed that most of the micro enterprises do not have clear strategies. Findings demonstrate that training and coaching owners/managers on how to develop strategy enable them to develop strategies. Processes/activities such as defining priorities and goals for each level, understanding market position of the firm, identifying market gap or requirements help owners to develop strategies. Implementation of the strategies is as important as the development of the strategies but it is observed that implementation of the strategy is harder than the development of a strategy. Foundation level capabilities – learning, empowerment, employee participation – have a fundamental role on the development of strategy development and implementation capability. Delegation of owner`s authority provides slack time to an owner for strategy development activities and employee participation contributes the implementation of strategies. The current literature on the development of strategy development and implementation is confirmed by findings as well as extended by identifying (a) strategy development training intervention and (b) learning, empowerment, employee participation capabilities to develop strategy development and implementation capability in Micro enterprises.

Dynamic capabilities are defined as the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments (Teece et al., 1997). In literature, development of dynamic capabilities requires certain routines such as sensing, seizing, transforming/reconfiguring, and leveraging (Teece et al., 1997; Ambrosini and Bowman, 2009). Different types of dynamic capabilities are introduced at chapter 2 but only 6 of them found relevant to micro enterprises. Development of relevant dynamic capabilities in micro enterprises is discussed below.

Networking and collaboration capability is defined as the firm`s ability to initiate, develop and utilise internal organisational and external inter-organisational relationships (Lall, 1993; Bititci et al., 2008; Zacca et al., 2014). Determinants of networking and collaboration capability are defined as coordination activities that increase collaboration between firms, relational skills of employees such as communication ability,

extraversion, conflict management skills, empathy, emotional stability, self-reflection, sense of justice and cooperativeness–, collecting information about partners, and internal communication (Marshall et al., 2003; Kale et al., 2002; Walter et al., 2006). Findings demonstrate that networking and collaboration capability can be developed by creating slack time for owner/manager to spend for networking activities such as sectorial meetings, visiting other businesses, or opportunity scanning. Moreover, other organisational capabilities have a positive impact on the development of networking and collaboration capability such as learning, empowerment and environmental scanning capability. Owners/managers have more slack time when authority is delegated within organisation equally. Environmental scanning capability also contributes the development of networking and collaboration capability by identifying possible partnership opportunities and gathering information about possible future partners. Findings confirm the current literature on the development of networking and collaboration capability. Additionally, it extends the current literature by identifying (a) management coaching, organisational structure change, customer engagement, collaboration interventions and (b) learning, empowerment, environmental scanning capability capabilities that contribute the development of networking and collaboration capability in Micro enterprises.

Environmental scanning capability is vital for opportunity and threat sensing. Teece et al. (1997) identify determinant of scanning capability as R&D routines, processes to select new technologies, supplier and complementor innovation, processes to tap development in exogenous science and technology, processes to identify target market segments, changing customer needs and customer innovation. Findings suggest environmental scanning capability can be developed by encouraging employees for idea generation, creating slack time for owner/manager to spend more time for scanning/searching activities, and collaborating with universities, government and non-government support organisations, and industrial chambers. Furthermore, empowerment, employee participation, continuous improvement, and networking and collaboration capabilities contribute development of environmental scanning capability. Development of employee participation and continuous improvement capabilities requires new knowledge and employees search and learn new knowledge. Empowerment enables owners/managers to allocate more time for scanning and searching activities. Networking and collaboration capability provides new knowledge

and/or technology. Findings confirm the current literature on the development of environmental scanning capability to some extent. It contradicts the literature as Micro enterprises may not develop R&D or similar processes that require high cost and skilled employees. Current literature is extended by identifying (a) management coaching, suggestion scheme, customer engagement, collaboration interventions and (b) learning, empowerment, employee participation, continuous improvement, networking and collaboration capabilities that contributes the development of environmental scanning capabilities in Micro enterprises.

Innovation and product development capability is substantial to create sustainable businesses by adapting firms to changing market requirements. Determinants of the development of innovation and product development processes are divided into internal and external processes. Internal sources of innovation capability are identified in the literature as number of employees and their skills, employer`s work experience (engineering and management experience), educational background, professional background of founder/managers, leadership skills of employees, participative culture, working environment, resources of the enterprises (financial and technological), R&D effort, and continuous learning (Berends et al. 2014; Calantone et al. 2002; Denham and Kaberan, 2012; Dul and Ceylan, 2014; Jochen 2014; Madrid-Guijarro et al. 2009; Romjin and Albaladejo, 2002; Saunila 2014; Saunila and Ukko, 2014; Saunila et al. 2014; Tie-jun and Jin, 2006; Yang, 2012). External sources of innovation capability are identified as external resources, financial support, intensity of networking with a variety of agents and institutions, geographical proximity advantages associated with networking, receipt of institutional support, external environment, government support, external partner, and external information (from suppliers, customers, industry associations and competitors) (Berends et al. 2014; Madrid-Guijarro et al. 2009; Romijn and Albaladejo, 2002; Saunila 2014; Saunila and Ukko, 2014; Tie-jun and Jin, 2006).. In contrast, the current literature, micro enterprises cannot develop capabilities to create radical changes in marketplaces – (research and development type of micro enterprises are excluded from this research). Findings demonstrate that source of innovation in micro enterprises are customers or other businesses. Thus, innovation and product development capability can be developed by developing processes to understand specific customers` needs before the competitors, collaboration with other businesses to improve production capability for developing new products. Moreover, certain

capabilities have positive impact on the development of innovation and development capability such as employee participation, continuous improvement, environmental scanning, and networking and collaboration capabilities. Findings contradict most determinants of innovation capability in the current literature due to the fact that Micro enterprises may not build most of them. However, it confirms the current literature to some extent as external information from customers and partners are the main source of the innovation and product development capability. It extends the current literature by identifying (a) management coaching, new equipment, customer engagement, collaboration interventions and (b) learning, continuous improvement, strategy development and implementation, environmental scanning, networking and collaboration capabilities that contributes the development of innovation and product development capability in Micro enterprises.

Marketing and sales capability is essential to bring new customers and create a sustainable business. In current literature, determinants of the development of marketing capability are identified as market sensing, customer engaging, and partner linking (Day, 2011; Srivasta et al., 1998; Teece, 2007; Day and Moorman, 2010; Du and Kamakura, 2012). Market sensing activities include detecting emerging opportunities, observing and predicting the evolution of markets (Day, 1994; Teece, 2007). Customer engaging refers to the ability of a firm to create intimate relationships with customers (McEwen, 2005; Park et al., 2010; Yim et al., 2008). Customer engagement can be developed through showing honesty, genuine care and sincerity to customers. Engagement accumulates through customer satisfaction, loyalty, influence, and excitement about a firm's products and service (Mu and Di Benedetto, 2012). Partner linking refers to the ability of a firm to connect with partners and leverage the resources and capabilities of partners in value creation (Mu, 2015; Day, 2011; Dyer and Singh, 1998; Srivastava et al., 1998). Findings demonstrate that marketing and sales capability can be developed by developing a marketing strategy, collaborating with other businesses and organisations, being more visible such as establishing websites, printing and delivering brochures and developing customer engagement. Moreover, certain organisational capabilities contribute development of marketing and sales capability such as learning, empowerment, continuous improvement, strategy development and implementation, imitation, innovation and product development, environmental scanning, and networking and collaboration capabilities. Empowerment

creates slack time for owner/manager for marketing activities. Continuous improvement promotes product quality and reduces lead time to increase sales and expand market share. Strategy development and implementation enable firms to develop marketing strategies. Networking and collaboration capability enable firms to access new markets. Findings confirm the current literature on the development of marketing and sales capability in Micro enterprises. The current literature is extended by identifying (a) establishing website, customer engagement, collaboration, strategy development, product catalogues, showroom improvement, social media interventions and (b) learning, empowerment, continuous improvement, strategy development and implementation, innovation and product development, imitation, environmental scanning, networking and collaboration capabilities that contributes development of marketing and sales capability in Micro enterprises.

Imitation/replication capability is one of the key capabilities for micro enterprises. In current literature, the key concept is developed by Winter and Szulanski (2001) and replication capability require two basic routines – cumulative learning to discover (exploration) and replication of the latest iteration of the template (exploitation). Findings demonstrate that production capacity is important for the development of imitation capability in Micro enterprises. Additionally, continuous improvement and environmental scanning capabilities contribute the development of imitation capability. Environmental scanning activities provide information about the market place and identify opportunities to produce and create final products. Continuous improvement and production capabilities enable firms to produce/imitate products with reasonable costs. Findings confirm the current literature on development on imitation capability in micro enterprises.

Decision making capability is substantial to make right decisions in each level. In current literature, strategic decision making process is dived into three stage as intelligence activity (environmental scanning for data gathering), design activity (formulated alternatives to determine likely outcomes and identify alternative outcomes) and choice activity (choosing among alternatives with judgement) (Wally and Baum, 1994). Tools and techniques are introduced in literature as well. Findings demonstrate that it can be developed by developing strategy, identifying goals and priorities, and establishing a decision making procedures for each level. In addition, strategy

development and implementation capability and empowerment contribute development of decision making capability. Findings confirm the current literature on the development of decision making capability. Additionally, it extends the current literature by identifying (a) strategy development intervention and (b) learning, empowerment, strategy development and implementation capabilities to develop decision making capability.

In conclusion, development of organisational capabilities is argued by many research. Many researchers investigate a specific type of organisational capability and their development processes. Findings of this research show that development of organisational capabilities requires different activities in micro enterprises. Specific interventions are designed and test for the development of organisational capabilities in Micro enterprises. These interventions extend the current literature as they were not tested before. Moreover, **the evolution of organisational capabilities shows that organisational capabilities are interdepended and evolve together in micro enterprises.** Highly decentralised large enterprises can develop specific organisational capability within a department or division but micro enterprises are centralised and there are no departments or divisions. Thus, relationships between organisational capabilities are more observable in micro enterprises than SMEs and Large enterprises.

9.3 Theoretical Implications

Contributions of this research is represented above. Various theoretical implications can be derived from this research for researcher who will conduct research in the field of organisational capabilities.

First, findings show that organisational capabilities evolve together and there are strong relationships between capabilities. For instance, findings show that there is a strong relationship between marketing capabilities and continuous improvement capabilities. Number of sales are depending on the production capacity which can be increased by continuous improvement activities in micro enterprises. While continuous improvement activities increase the operational excellence, marketing and sales capability enable firms to adapt and change through customer requirements. Sustainable business performance is the outcome of interrelationship between organisational capabilities. Thus, organisational capabilities should be considered not individually but as a system

of capabilities. However, in literature, most of the researchers focus on development of one particular organisational capability such as innovation, marketing, product development (Knight and Cavusgil, 2004; Mosey, 2005; Wang et al., 2010; Ren et al., 2015; Jansen et al., 2015). The implication of this is that in the future any research conducted in to organisational capabilities such as learning, dynamic capability, operational capability and so on should recognise the fact that these capabilities co-exist as part of a system of capabilities.

Second, sector, type, age and business environment shape the development of certain organisational capabilities in micro manufacturing enterprises and some organisational capabilities are more important and developed than others. For instance, firm A, which is in furniture industry, require highly developed imitation capability while other firms do not have to develop imitation capability as much as firm A. Moreover, interventions are designed to develop organisational culture and learning first and then operational and dynamic capabilities but a different approach is taken for firm D as they are a new start up business, they needed more customers and sales for survival. Thus, interventions are designed to increase sales at the beginning and then develop organisational learning and culture. The implication of this is that organisational context underpins the capabilities required and thus the nature of the interventions that would be appropriate to develop these capabilities. This also suggest that the capability development model is not linear, it is more iterative and it is driven by context.

Third, in operation management and business management field, there are different methodological approaches to measure organisational capabilities but maturity models are not that common in the field yet. The maturity model used in this research showed that maturity models can be used as a measurement tool in operation management and business management fields. The implication of this is that wider use of maturity models could be adopted in future research to observe the development of organisational capabilities over time.

Finally, on the one hand action research has been criticised by many academicians due to the high involvement of researcher. On the other hand, in micro enterprises case study or survey type of methodologies can face data reliability problems due to small numbers of people that could be interviewed or surveyed. This research demonstrates

the feasibility and advantages of action research in researching organisational capabilities in micro enterprises.

9.4 Practical Implications

In this section, various practical implications are outlined. First of all, some environmental and economic issues that micro enterprises face are identified. Micro enterprises cannot solve most of these problems such as high tax rates, uneducated or unskilled employees, and difficulties to access some markets. Most of the issues can only be solved by policy makers. This research emphasis the critical issues that prevent micro enterprises from being more competitive and policy makers can produce projects and policies to solve these issues to enable micro enterprises to perform better.

In this research, organisational capabilities that are relevant to traditional micro manufacturing enterprises are identified. Interventions are designed to solve micro enterprises` issues as well as to develop certain organisational capabilities. This knowledge can be used to create a training programme by trade unions, government support organisations, and micro enterprises. Government support organisations already develop projects to improve the competitiveness of SMEs. A training programme can be designed to deliver micro enterprises based on the findings of this research.

In addition, an organisational capabilities maturity model is developed for micro enterprises. This maturity model not only provides assessment of maturity levels of organisational capabilities but also provide knowledge to use as guidelines to improve and develop organisational capabilities in micro enterprises. Thus, capability maturity model can be used by micro enterprises to develop strategies to improve organisational capabilities.

9.5 Limitations and Future Research Suggestions

In this section, research limitations and suggestions for future research are outlined. First of all, time was one of the main constraints of this research. As action research methodology is chosen for this research, some observable changes require more times such as the development of learning capability, organisational cultures. However, monitoring firms for 12 months were not enough to observe certain capability

developments and as it is a PhD research, research had limited time to collect data. In addition, findings show that one intervention can have positive impact on development of different organisational which should be carefully designed and observed. Thus, researchers who would like to conduct a similar research should have qualitative data analysis and observation skills. Secondly, qualitative research methods have the disadvantage of generalisation. Findings of this research cannot be generalised until they are validated with bigger sample size. Even thought, data provides a deeper understanding of the development of organisational capabilities in micro enterprises, it is still early to make general statements. In addition, findings might show some differences in other countries as this study is conducted in Turkey. Culture has an important role on the development of organisational capabilities and each country also have a different culture. Thus, the findings of this research are applicable in Turkey but it can be validated by conducting same research in another country with different micro enterprises. Furthermore, future research can be carried out to compare development of certain organisational capabilities in micro, SMEs and large enterprises to understand how development of specific organisational capabilities are different. For instance, there were no evidence that reconfiguration capability is relevant or not relevant to micro manufacturing enterprises but if this research was conducted in micro consultancy enterprises, reconfiguration capability might be found relevant as their processes and products require higher flexibility than traditional manufacturing environment. In addition, findings show that one intervention can have positive impact on development of different organisational which should be carefully designed and observed. Thus, researchers who would like to conduct a similar research should have qualitative data analysis and observation skills. Finally, traditional micro manufacturing enterprises are investigated in this research. Relevant organisational capabilities might be different for different type of micro enterprises. For example, trading, consulting, high-tech, research and development type of micro enterprises might need to develop different organisational capabilities than manufacturing type of micro enterprises. This research can be conducted to see differences between different type of micro enterprises and which organisational capabilities are more relevant for specific type of micro enterprises.

9.6 Conclusion

This research is conducted to understand the development of organisational capabilities in micro enterprises. Organisational capability theories are developed to understand internal source of firms (Barnet, 1991; Wernerfelt, 1984). In the current literature, there are more research that are conducted in the context of large enterprises and few in the context of SMEs. This research is conducted to extent organisational capability theories into a new context. Findings illustrates that differences between micro enterprises and SMEs and Large enterprises require adjustments to develop organisational capabilities in micro enterprises. This research contributed theory in several areas as they are summarised at table 9.1 and key conclusions of this research are;

> *"Organisational capabilities are interrelated and should be considered as a system"*
>
> *"Micro enterprises also develop organisational capabilities based on their needs and the development processes require adjustments based on resource structure"*

Table 9.1 Summary of contributions

No	Contribution	Evidences		Nature of Contribution
1	It demonstrates that organisational capabilities are relevant to Micro enterprises.	Literature and Data	Chapter 2 and 3	New
2	It defines differences between Micro enterprises and SMEs and Large enterprises.	Literature and Data	Chapter 3	Extend
3	An integrated theoretical framework of organisational capabilities are developed.	Literature	Chapter 2	Extend
4	A conceptual framework is developed based on requirements of traditional micro manufacturing firms.	Literature and Data	Chapter 3, 7, 8 and 9	New
5	Development of organisational capabilities are identified.	Data	Chapter 7, 8 and 9	Extend
5.1	Learning capability can be developed via low cost employee training, encouraging idea generation and sharing within the employees, improving collaboration with other businesses and increasing employee participation.	Data	Chapter 7, 8 and 9	Confirm, Contradict, Extend
5.2	Organisational culture can be improved via creating an organisation structure that authority is shared with employees, encouraging employees to take more responsibility, reward and recognition of employees` contribution, encouraging self-development of employees, idea generation and sharing.	Data	Chapter 7, 8 and 9	Confirm, Extend
5.3	Continuous improvement capability can be developed via short-low cost training, creating awareness of waste, establishing idea generation processes, encourage and monitor CI activities/	Data	Chapter 7, 8 and 9	Confirm, Extend
5.4	Strategy development and implementation capability can be develop through strategy development training.	Data	Chapter 7, 8 and 9	Confirm, Extend
5.5	Networking and collaboration capability can be developed via creating slack time for owner/manager and increasing collaboration activities with other businesses and organisations.	Data	Chapter 7, 8 and 9	Confirm, Extend
5.6	Environmental scanning capability can be developed via creating slack time for owner/manager, encouraging idea generation, increasing collaboration activities with other businesses and organisations	Data	Chapter 7, 8 and 9	Confirm, Extend
5.7	Innovation and product development capability can be developed via developing customer engagement, increasing collaboration activities with other businesses and organisations	Data	Chapter 7, 8 and 9	Confirm, Extend
5.8	Marketing and sales capability can be developed via developing marketing strategy, collaboration with other businesses, being more visible, and developing customer engagement.	Data	Chapter 7, 8 and 9	Confirm, Extend
5.9	Decision making capability can be developed via defining priorities, developing strategies and decision making procedures.	Data	Chapter 7, 8 and 9	Confirm, Extend
5.10	Imitation capability can be developed via developing continuous improvement and environmental scanning capabilities.	Data	Chapter 7, 8 and 9	Confirm

9.7 Personal Reflection

Uncertainty is my biggest fear in the life and a PhD journey is fulfilled with uncertain moments. The biggest uncertainty in this journey was will I be able to see how it ends? For a long time, I was thinking how will it end more than how will I do. During this journey, there were challenges and critical points that has positive impacts on my development. First challenge was to understand a new body of literature which has been developing for last 40 years. I began the journey by searching research has been conducted on dynamic capabilities but there are lots of different definition of dynamic capabilities and I was confused a lot at the beginning. It was a big challenge to differentiate routines, capabilities, and resources. For example, one of the biggest challenge for someone new in the field is that "*is scanning a routine or a capability*?" Another challenge was dynamic capabilities were not enough to understand whole concept, first operational capabilities are included, and finally organisational capabilities are reviewed as a whole concept.

First critical point for me was rejected for a conference which motivated me to work more to produce better papers. Another critical moment happened in a conference in Istanbul. After my presentation a professor asked me *"Why do you conduct this research in Micro Enterprises?"* and my defence was very weak. Today, I can answer this question with full of confidence that conducting organisational capability research in a large company could have provided me good networking opportunity but I would not be able to observe all organisational capabilities and maybe they would not be agreed on to conduct an action research. Micro enterprises are smaller than Large enterprises which might be seen a weakness but this was my biggest advantage to be understand link between organisational capabilities. I had to make interviews with manager of different departments but I was able to ask all those question to owner/manager of the micro enterprise. Consequently, conducting this research on micro enterprises enable me to state *"organisational capabilities are interrelated and they should be investigated as system"*. Finally, I can look back and see how I evolve with this research project as a researcher. My supervisor Umit S. Bititci has important role at this evolution as a mentor, motivator and supervisor.

During this period, I had opportunity to produce three conference papers as follow;

Inan, G.G. and Bititci, U.S. (2015) "Understanding organizational capabilities and dynamic capabilities in the context of micro enterprises: a research agenda" *Procedia-Social and Behavioral Sciences*, 210, pp.310-319.

Inan. G.G. and Bititci U.S. (2015) "Understanding organizational capability theories in the context of micro enterprises" *22nd EurOMA Conference: Operations management for sustainable competitiveness.* Neuchatel, Switzerland. 26 July - 1 June, 2016

Inan, G.G., Kop, A.E. and Bititci, U.S. (2016) "Understanding innovation capability in micro enterprises" *POMS 27th Annual Conference; Innovative Operations in an Information and Analytics Driven Economy*. Orlando FL. May 6-9, 2016

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APPENDIXES

APPENDIX I – RESEARCH PROTOCOL

Micro Companies` Organisational Capabilities Development Project

Research Protocol

By G. Gurkan Inan

February **2014**

1. Introduction

This document provides information about how research to develop organisational capabilities for Micro Enterprises, will be conducted.

The aim of this project is understanding organisational capabilities of Micro Enterprises, how organisational capabilities can be developed in Micro Companies. In our research, I will conduct semi-structured interviews with owners or/and managers of firms, use some tools such as PESTEL, Porter`s Five Force, Value Stream Mapping. A detailed business review report will be prepared based on information gathered. Then follow up meeting will be held with the owners or/and managers to design intervention plan. This intervention plan will be based on the companies` urgent needs. Interventions will be introduced to owners/managers but they do not have to implement these interventions. Following months, implementation of interventions will be observed and monitored.

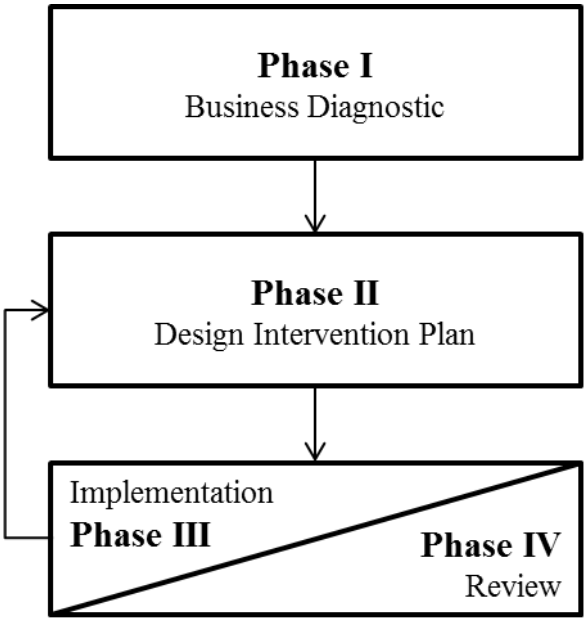


Figure-1; Research Master Plan

2. Phase I – Firm Diagnostic

In this phase, there will be interviews and industry research. Interviews will be done with owners or/and managers of firms. Semi-structured interviews will be used due to get better valid answer without direct the interviewer. A voice recorder will be used to record all conversation to not distracted by taking notes and recap again. There are certain topics focused on.

2.1. Macro and Micro Environment of Firm

Aim: understanding how firm is affected from changes on the environment, and how much related with the external sources.

Tools: PESTEL and Porter`s Five Force tools will be used for data collection.

Method: There will be interviews with owners or and managers of firms. Open questions will ask to interviewers to get more natural answer such as;

- How does your firm affected from political, economic, social, technological, ethical, and legal changes?
- How can you describe your position in the market place?
- What kind of threats do you have in the market place? (new entry, supplier, buyer, competitors, substitution)

2.2. Strategy

Aim; determine the strategy company has to compete within the market.

Tools: Value Proposition (Treacy and Wiersema 1996; Martinez and Bititci, 2006), SWOT analysis, Strategic posture assessment

Methods: Interview, some questions;

- What is the vision of the company?
- What do you offer your customers? (Operation excellence, customer intimacy, product leaders)

2.3. Operations

Aim: understanding operating model and operations within the firm and able to see potential problems.

Tools: Value Stream Mapping (VSM)

Method: VSM methods will be followed to outline material flow, information flow and cash flow. To understand operating model there will be questions as follow;

- What is the organisational structure of the company?
- What kind of networks are you involved in? Why/Why not?
- Make to Order/Make to stock/Assemble/Batch type of production
- Business to business/Business to customer/Mix

2.4. Relationships with Customers/Suppliers

Aim; understand relationship between customers and suppliers.

Tools;

Method: Interview, some questions

- What kind of relationships do you have with your customers/suppliers?
- How loyal your customers?
- How loyal you are to your suppliers?
- Where are your customers/suppliers? (local/national/international)
- How do you find new customers/suppliers?

2.5. Leadership, People and Culture

Aim: To understand company cultures, leader management style and

Tools;

Method; Interview, some questions;

- How can you describe your management type?
- How is the relationship/collaboration between employees?
- How do you make decisions?
- What kind of training do you offer your employees?
- What is the staff turnover?
- Where do you employ your staff?
- Does it hard to find new staff?
- How hard does it train a new staff?

2.6. Organisational Capabilities

Aim: understand what type of organisational capabilities firms should develop/ already developed and how.

Tools:

Methods; Interviews, question will be around various organisational capabilities such as

- Environmental scanning
- Reconfiguring resources
- Networking
- Alliancing / Collaborating
- Knowledge development / Learning
- Experimentation
- Imitation / replication
- Customer intimacy and sales

Some questions;

- Do you have scanning activities the environment? If its yes, what type activities are they?
- How do you know changes in the market place, production machines, materials etc.?
- Do you able to respond changes? If yes, how do you respond it?
- Do you have any collaboration or alliance with any other organisation?
- How do you find new collaboration opportunities?
- What is the main source of learning in the organisation?
- Do you need imitation capability? How did you build your capability?
- How close are you to customers?
- How much do you know your customers?
- Do you have any strategy to increase your sales? What is it?

2.7. Observations and Maturity Assessment

Observations will be held in production. I will have opportunity chat with employees within the organisation. First maturity assessment will be made based on observations and interviews.

2.8. Business Review

After data is collected, a business review will be prepared. The report will include;

1. Introduction
    - general description of what report contains
2. Business Information
    - background of company, what it produces, strategies etc
3. Current State of Firm
    - what is the position of firm in the market place, current threats from internal and external sources, opportunities for future etc
4. Identified Problems and Suggested Solutions
    - some projects and ideas
5. Conclusion
    - generic closing statement

These reports will be prepared for each company who involved the research. A copy of report will be sent to Prof. Umit S. Bititci. and another meeting will be arranged with companies to present their current situations, problems, threats and opportunities.

Phase II – Design Intervention Plan

Our report will have some suggested ideas and solutions for firms. These solutions will be divided into 3 categories based on return period of the project such as short term, medium term, and long term. Some decision making tools will be used such as cost-benefit matrix.

Short term projects will focus on cost reduction.

Medium term projects will focus on to develop operational and strategic capabilities.

Long term projects will focus on to develop organisational capabilities.

All projects and solutions will be listed in a table.

Phase III – Implementation

Implementation stage, I will have observing role in the company. I will visit companies and check the progress of projects.

Phase IV – Data analysis

Phase III and IV is linked together while projects are running, we will analysis data. There may be need for return to intervention plan and revise/change or add new interventions.

In this stage answers of following research questions will be given;

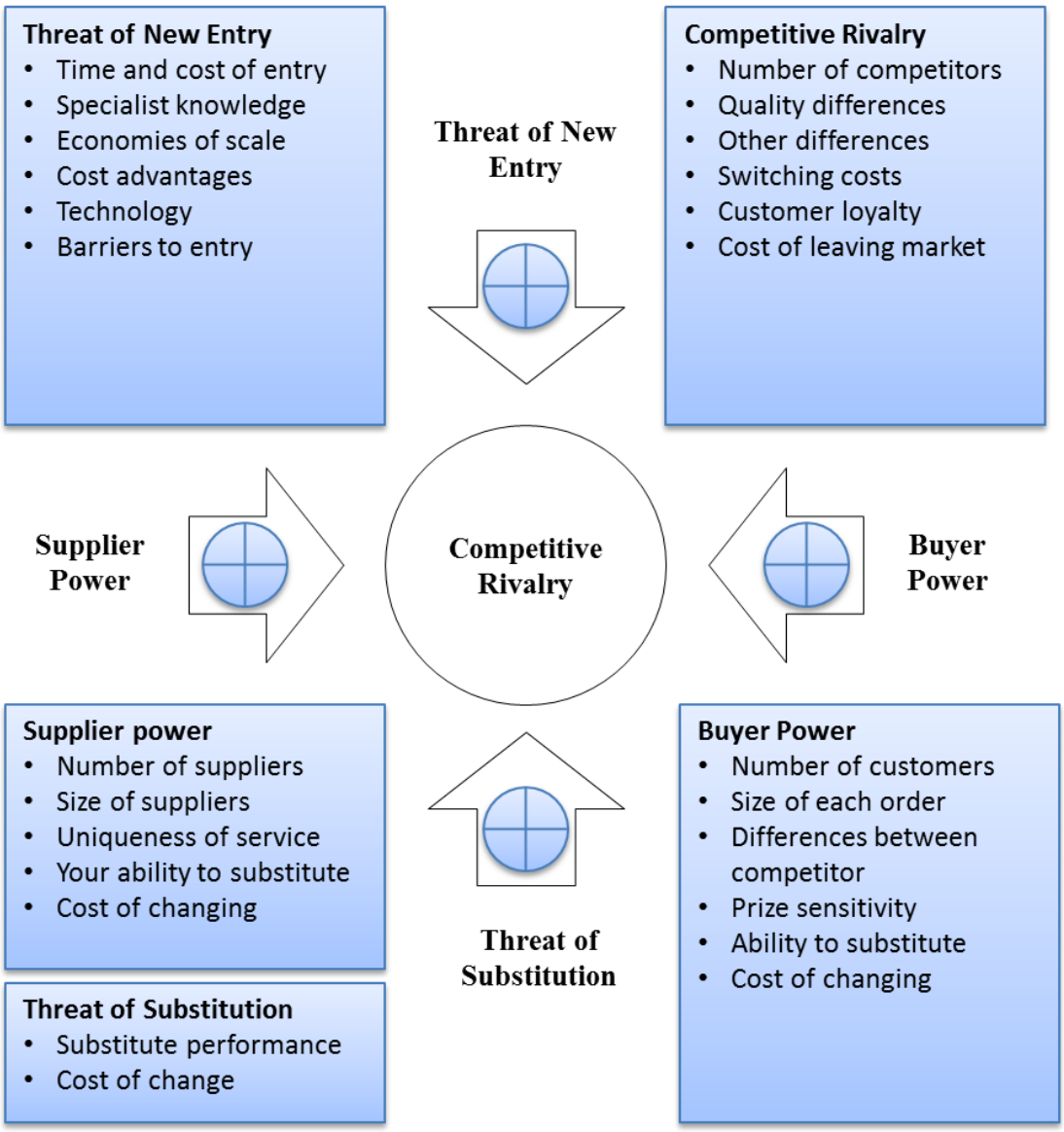
- What specific types of organisational capabilities are related with micro companies?
- How micro companies develop their organisational capabilities?

A. PESTEL Analysis

1. Political factors:				3. Social factors:				5. Legal factors:			
Trading policies				Ethnic/religious factors				Employment law			
Government changes				Advertising scenarios				Consumer protection			
Shareholder and their demands				Ethical issues				Industry-specific regulations			
Funding,				Consumer buying patterns				Competitive regulations			
Governmental leadership				Major world events				Current legislation home market			
Lobbying				Buying access				Future legislation			
Foreign pressures				Shifts in population				Regulatory bodies and their processes			
Conflicts in the political arena				Demographics				Environmental regulations			
				Health							
2. Economic factors:				Consumer opinions and attitudes				**6. Environmental factors:**			
Disposable income				Views of the media				Ecological			
Unemployment level				Law changes affecting social factors				Environmental issues			
Foreign exchange rates				Change in Lifestyle				International			
Interest rates				Brand preferences				National			
Trade tariffs				Working attitude of people				Stakeholder/ investor values			
Inflation rate				Education				Staff attitudes			
Foreign economic trends				Trends				Management style			
General taxation issues				History				Environmental regulations			
Taxation changes specific to product/services								Customer values			
Local economic situation and trends								Market value			

4. Technological factors:				Patents				Intellectual property and its laws			
Technological development				Licensing				How mature a certain technology is			
Research and development				Access into the technological field				Information technology			
Trends in global technological advancements				Consumer preferences				Communication			
Associated technologies				Consumer buying trends				Legislations in technological fields			

B. Porter`s 5 Force



C. Value Proposition Profile Mapping

Read the description of the value propositions to identify which fits your business. The read the two 'value matrix' descriptions associated with it and see which fits.

If you have more than one value stream repeat this for each.

Value propositions (Treacy and Wiersema 1996)	Value matrix (Martinez and Bititci, 2006)	
Product leaders: propose new technologies and product designs to their customers at the right time. They offer the leading technologies and products, price is not a priority issue for their customers.	Innovators: continuously provide new and innovative technologies, products and services. Their core competency is the capacity to continuously innovate.	Brand Managers: focus on the brand image, product-service's, quality and style of the product-service, and the pre-, during and post-customer experience. Their core competency is the marketing brand management.
Operational excellence: propose standard products to their customers, at the best price with least inconvenience. These organisations offer the best price for their products within their competitors' radius.	Price minimisers: offer good quality, reliable and sensibly price products. Their core competency is the efficient production processes that drive operational costs down.	Simplifiers: provide availability and convenience to the PSS offers. Their core competencies are the streamlined processes, automated-order generation and order fulfilment. to make customers' life uncomplicated.
Customer intimacy: who work with limited number of customers and offer the best total solution. These companies focus on delivering the best customised product, technology and/or service.	Technological Integrators: provide continuous total solutions and tailored products and services. Their core competency is the specialisation on few customer businesses.	Socialisors: provide flexible and reliable services. Their core competency resides on the service delivery and long relationships with customers.

D. Strategic Posture Assessment

For each column highlight the cell that most accurately describes the business. If you have more than one value stream, use a separate worksheet for each.

Product and Service Characteristics					
Price	**Features**	**Quality**	**Service**	**Availability**	**Reputation**
Premium	Original	Excellent	Comprehensive	Restricted	Prestigious
Premium/ Competitive	Original/ Customised	Excellent/ Average	Comprehensive/ Standard	Restricted/ Selective	Prestigious/ Respected
Competitive	Customised	Average	Standard	Selective	Respected
Competitive/ Leader	Customised/ Basic	Average/ Acceptable	Standard/ Minimal	Selective/ Universal	Respected/ Functional
Leader	Basic	Acceptable	Minimal	Universal	Functional

Market and Customers Characteristics				
Market	**No. of Customer**	**Customer Relations**	**Customer Loyalty**	**Customer Engagement**
Local	Very Few	Intimate	Spot	Face to face
Local/Regional	Few	Intimate/Standard	Spot/intermittent	Face to face/Mix
Regional	Average	Standard	Intermittent	Mix
Regional/Global	Large	Standard/Remote	Intermittent/ Continuous	Mix/e-Only
Global	Very Large	Remote	Continuous	e-Only

Characteristics of Operational Processes				
R&D and Innovation Intensity	**Product Dev. and NPI Intensity**	**Marketing and Sales Intensity**	**Focus on Fulfilment Productivity**	**Product/Service Customisation Profile**
High	High	High	High	Fully-customised
High/Medium	High/Medium	High/Medium	High/Medium	Semi-customised
Medium	Medium	Medium	Medium	Mass customised
Medium/Low	Medium/Low	Medium/Low	Medium/Low	Mass prod/mass customised
Low	Low	Low	Low	Mass produced

Strength	**Weakness**
Opportunity	**Threat**

APPENDIX II – FIRST VERSION OF MATURITY MODEL

Managerial Capabilities					
		Basic	Intermediate	Advanced	Leading
Culture					
	People participation	Employees do not involve any activity	Employees can share their ideas but managers do not consider them very deeply	Ideas from employees are considered by manager and	Managers encourage employees to share their ideas
Organisation Structure					
	Empowerment	Managers command and control Decisions made by managers Employees do not have any responsibilities rather than their work.	Some experienced employees have limited control Managers delegates some of their responsibilities to lower levels.	Some extra skilled tasks add to employees` tasks Employees have more responsibilities	Information sharing is high in the business Employees are managed by themselves. There is no traditional hierarchy.
Strategic Capabilities					
		Basic	Intermediate	Advanced	Leading
Business Model					

	Focused Value Proposition	No idea about what they offer to customers	Have ideas but not clear	Know what they offer to their customers	Know what they offer customers and try to improve weak sides
	Profit Formula	Do not know how they make money	They have ideas but not clear	They have clear profit formula	They consider possible new profit formulas
	Operating Model	Do not know what is their operating model		They have well establish operating model.	They know they can improve their operating model and they try to improve it
Operational Capabilities					
		Basic	Intermediate	Advanced	Leading
Continues Improvement					
	5S	Untidy workplace There is no standard order	Keep clean working place but there is no standards	There are standard places for each equipment and stocks.	working place is designed to prevent disorders Employees clean work areas and keep everything in order Standardisation is based on efficiency

	Visual Management	No visual board or anything	There are common visual signs such as No Smoking or Exit	There are task boards to show who does what and how	When someone enter to work place, he/she can simply understand what's going on
	Standardisation	Do not have any reliable control equipment	Have reliable control equipment but not for all processes	Have reliable control equipment	Have reliable control equipment
	Problem Solving	There is no problem solving activities	There are some problem solving activities but they do not follow any well-established methodology	They solve problems with methodological approaches.	They look for new problem solving tools and techniques
	SMED	they do not see changeovers as a waste	They aware of changeovers are waste but they think they cannot do better	They are trying to improve their changeover performance	They systematically improve their changeover performance
Dynamic Capabilities					
		Basic	Intermediate	Advanced	Leading

Networking and Collaboration Capability	No networking and collaboration activities	Try to collaborate close relatives and friends	Have collaboration with their supplier, customers to improve the business	Looking for networking and collaboration opportunities all the time
Environmental Scanning Capability	Do not have any activity to search environment	There are some talks with close friends about business environment	They usually spend free times for scanning activities	They spend certain time for scanning activities with systematic approach
Innovation and Product Development Capability	They do not have any innovation and product development activity	They have innovation ideas but most of them stay as an idea	When they find an innovative idea, they develop new products with this idea.	They spend time to innovate their products or/and develop new products
Imitation/Replication Capability	They do not have ability to produce what others can	They have ability to imitate simple products	They have ability to imitate any products	They have ability to imitate any products before their competitors
Marketing and Sales Capability	No marketing activities There is no market knowledge	Very basic marketing activities They have basic market knowledge	They have marketing strategy and activities based on this strategy They have better market knowledge	They revise or develop new marketing strategy to enter new markets.
Learning Capability	They do not know how they learn	They know they can learn but do not know how	They do not know how to create knowledge but they can use current knowledge they have	They can create knowledge and use that knowledge

Reconfiguration Capability	They do not change anything in the business	They reconfigure their workforce	They reconfigure their resources	They have ability to reconfigure their new resources
Decision Making Capability	No systematic decision making procedures	Their decision made by owner and they cannot tell what are the reasons behind that decision	They know the reasons behind the decision.	They use decision making tools and techniques to understand and show reasons, causes and outcomes

Appendix III – Interventions

Management coaching

Management coaching intervention is designed to inform owners/managers about critical issues within the business and possible solutions. Meetings are used to explain owner and manager key areas to improve. Empowerment is identified one of the main problems that prevents firms developing organisational capabilities. Thus, I have informed the owners/managers about delegating authority and trusting employees will create more slack time which they can focus on networking, marketing, collaborating activities. In management coaching meetings, the importance of having a strategy is emphasised by providing examples. Additionally, the progress of interventions is discussed with owners/managers. If interventions require adjustment or further training, these adjustments and training are discussed.

Organisation structure change

This intervention is designed to delegate authority to solve empowerment problem, encourage employees to participate, create slack time for owners/managers. In micro enterprises, all decisions are made by owners/managers and this prevents employees to participate, contribute and share their ideas. New organisation structures are designed by defining roles and responsibilities. Roles and responsibilities enable employees to make daily not critical decisions by themselves. Most experienced employees are promoted to be operation mentors/managers. Employees can go and ask to him/her before owners/managers. This prevents owners/managers to spend time on unnecessary daily issues and increases employee participation. It is observed that employees are more comfortable to share their ideas with operation mentors/managers than owners/managers.

Collaboration

This intervention is designed to increase networking and collaboration activities within the organisations. In meetings with owners/managers, the importance of collaboration with other businesses, government support organisations, and universities are emphasised and strategies are designed for each firm. Possible collaboration partners are listed and how these organisations can contribute the firms are discussed. As a result of these meetings, firms increased collaboration activities such as searching funds from

support organisations and/or production partnership with other businesses. For example, owner/manager of firm A used his personal network to increase sales.

Strategy development

Strategy development intervention is designed to teach owners/managers how to develop strategies. In this trainings, a SWOT analysis is conducted for each firm with owners/managers. Priorities and goals of the firms are outlined. Possible strategies are discussed with employees. Marketing, collaboration, and operational strategies are formulated in these meetings.

Customer engagement

This intervention is designed to emphasise the importance of understanding customers and develop processes that increase communication between customers and firms. In meeting with owners/managers, strategies are developed to create loyal customer bases and processes that gather knowledge about customers. For example, in firm A, a strategy is developed as creating a database for each customer and contacting with them after a year later to check if there is any problem with furniture. In firm C, marketing strategy is revised as they were offering more complex products which were costing more for both producer and customers. It is decided that sales team will explain cost structure of products to customers and reduce the number of colours and cost for both customer and producer.

Establishing website

This intervention is part of marketing strategy and it is designed to bring firms to online platforms and increase the visibility of firms. In a fast changing environment, micro enterprises should also adopt their organisations to these change and their products must be seen on online searches. Thus, in meetings with owners/managers, it is emphasised that establishing a website can attract new customers. For example, firms A, B and D did not have a website and three websites are established for them. Firm A had new customers that saw their products on the website and visited the showroom.

Using social media

This intervention is designed to increase customer engagement and attract new customers. Social media platforms enable people to access crowded. This intervention is

designed for firm D. Firm D is an organic jam and local food producer. It is discussed with the owner to create a Facebook page which she can share the products and increase her reputation.

Showroom improvement

This intervention is designed to increase sales in firm D. Firm D has a showroom in the city centre which is away from its production site. The showroom is not well organised and products are not represented professionally. There is not even a visual sign that shows there is a furniture showroom in the premises. It is discussed with the owner to create a better showroom which all bedroom furniture can be represented in same area or all living room furniture can be represented in the same area, and put some visual signs on the showroom windows to attract customers.

Product catalogue

This intervention is designed to improve marketing activities in firm A. Firm A has a lot of product variations but they cannot present all the furniture in the showroom. Thus, it is advised that a product catalogue can increase sales while it is not possible to represent all the products in the showroom.

Continuous improvement training

This intervention is designed to train employees about continuous improvement activities. 20-30 minute short training are designed. In these training, the importance of idea generation and employee participation is emphasised. Seven type of daily waste (Transport, inventory, movement, waiting and delays, over production, over processing, and defects) are explained. Value adding and non-value adding activities are explained with examples.

Suggestion scheme

This intervention is designed to increase employee participation and encourage idea generation. An idea card is designed and placed in certain areas. Employees are informed how to fill the forms. A reward system is suggested to motivate employees to share their ideas.

Training a CI employee

This intervention is designed to create a continuous improvement culture in firm C. Firm C has most employees within four cases and they have an employee who is responsible for monitoring production and report to owner/manager. A new role is defined for this employee and I provided books and articles about 5S, SMED, FIFO, Visual Management.

5S

This intervention is designed to improve efficiency in working places. A basic 5S training is designed by explaining five steps as follow; Sort – remove unnecessary items from working area. Set in Order – keep equipment and items in an order, categorise items and equipment, keep close usually used items and remove rarely used items away. Shine – all employees will clean workplace and equipment after use and put it back to its dedicated place. Standardise – standardise the best practice in work. Sustain – maintain the standards in work areas. These steps are explained to employees and owners/managers are responsible for monitoring the progress.

SMED

This intervention is designed to reduce changeover times. First of all, it is explained to owners/manager that setup times are not value adding activities. Then, a training is given to employees which include; prepare everything you need before the machine stop, find the correct adjustment at first try (mostly owners/managers responsible for improving this step), and do not interested in anything else until the machine starts to work. This training is given to employees and owners/managers are informed about some changes can improve the efficiency such as screw types, locking systems etc.

Delivery improvement

This intervention is designed to improve the quality of deliveries for firm D. Firm D is producing jam and local foods. Jam is sold in glass jars which are broken in long distances and she has lost some customers in other cities. I advised her to communicate with firm C which produces boxes and orders some special boxes to protect products.

FIFO

This intervention is designed to reduce the risk of the expiry date of fresh fruits for firm D. A tracking system is designed as when they purchased fresh fruits, they stick a number on the packet and put it into the freezer and keep a full list with numbers, type of fruit and the date. When they need the get a packet from the freezer, the need to get the lowest number.

New equipment/standardisation

This intervention is designed to improve product standardisation in firm C. Quality control of semi-products are made without any equipment. Some monitoring equipment is suggested to purchase.

Appendix IV – Case Report; Firm A

Introduction and Background

Firm A is a local furniture producer for 50 years. Son of founders is managing the firm now. They produce classic, modern and customised furniture as seen from figure -1. There are 1 part-time and 7 full time employees. This is a business to customer type business.

Initial Diagnostic

Culture

This firm is a family business and 4 employees are relatives. Thus, there is a friendly environment at this organisation. Employees, who work at production, are allocated individually to orders by owner/manager. When they need extra manpower, they help each other such as cutting big size chipboards, they cut together. Thus also shows collaboration between employees are developed at certain level. Although, two of the production employees are stakeholder of the firm, manager needs to monitor their day-to-day activities. He says *"If I do not visit manufacturing site every morning, we cannot deliver any order on time"*. Furthermore, he also says that *"Our employees can produce any type of product and solve any problem when they face production process of an order, they do not try to increase productivity. Thus, we are not able to produce any order before 2 weeks."* From owner statements and my observations at firm, it can be concluded that there is still command and control culture due to employees do not take responsibilities and they need someone to monitor them.

Learning Capability

In our conversation with manager, he said that *"There is always new production technologies, materials and equipment. To be able to fulfil customer needs, we need to learn those production techniques and materials. Firms who sell those materials are usually provide free training and I try to send my employees when we are not that busy".* Their employees are also experienced and they are growing traditional Ahi-order – pupil, assistant master and master- culture. All their employees learned to be a furniture maker in this organisation. Most experienced employee is working for 27 years. Based on my observation and manager statements, they have developed experiential learning for years. However, they still need to learn to search and find new ideas, and/or different ways to doing same work for better performance. Manager is the

only one who tries to learn new technologies, materials, or trends in furniture industry and this limits their overall learning capability.

Operational Capabilities

It can be separated under two headings to understand operational capabilities. Firstly, employees do not contribute to increase operation productivity at the firm. For instance, when they deliver furniture for installation they might forget a tools or a part of the furniture and they need to go back to manufacturing site or kindly request customer to bring it following days. Manager also says that *"When I visit the manufacturing site, I am not able to find any tools easily. Each master has their own table and tools. Even they are not able to find their own tools quickly. Thus, they usually miss something."* Furthermore, even though they are able to deliver their orders on time, they lose customer due to the long lead times. They do not stock many products due to financial issues and customers do not like to buy furniture from stock or showroom. Manager explain their weak side with this sentences *"I need to request as much time as possible for delivery an order – especially summer time – to be able to manage production schedule*". Based on my observations and conservations with owner, continues improvement capabilities are not well developed. In addition, owner cannot make any strategy statement. When I ask their strategy, he could not make any clear strategy statement but when I ask him *"Why do you think that your customers choose you?"* He said that *"they trust us about our high quality and also they know that we will deliver their product on time".* Even thought, they have strengths of their business, they do not have a formulated strategy. But all their employees know that quality of product is important so they control each other orders to check if there is any faulty or not.

Dynamic Capabilities

Dynamic capabilities of firm are more depended on manager activities. For instance, networking and collaboration capabilities are not well developed only with one exception. Their manufacturing site is located in a furniture production industrial area and there are many other manufacturers. Thus, they have good relationships and collaboration with other manufacturing firms such as painting and plating operations are made by other organisation and they have good relations with those firms. Manager explains these relations with other manufacturers as *"We are all friends in same production site. We communicate with each other for future orders and give them*

certain dates in advance so they are able to put our products in their schedule in advance". However, they do not work with any University or government support organisations. Manager also explains their reasons as *"it is hard to get fund from government support organisations if you do not support a politician or you need to be their relatives. I had tried to get some fund in the past and they requested very unnecessary documentations to make me give up. Thus, I do not want to make any business with government organisations".* Furthermore, environmental scanning activities are also limited to manager individual effort. He says that *"I know that I should attend EXPOs or visit big furniture showroom but I cannot find spare time. I spend all morning at manufacturing and rest of the day at showroom to sell products".* In addition, innovation and product development capability is based on what their customer needs. He says that *"we are able to produce anything that our customer request".* Thus, source of innovation is customers. In addition, manager shows products at any big furniture producer catalogue to their customers and produce with reasonable prize and time. It can be suggested that imitation capabilities are developed at this firm. As a result, it can be concluded that their dynamic capabilities are not developed based on my observations and conservations with manager.

First Maturity Assessment

First maturity assessment is conducted after 5 days of observations and interviews with employees and owners.

Table – 1 First maturity assessment

Foundation Level Capabilities	Basic	Intermediat	Advanced	Leading	Explanation
Culture					
Participative Culture	X				Employees do not like to give more than required job
Empowerment	X				All decisions are made by owner and he control all processes.
Learning	X				Learning activities are limited with owner.
Operational Capabilities					
Strategy Development and implementation					
Strategy development	X				They cannot make a clear strategy definition.
Strategy implementation	X				No strategy no implementation.
Continues Improvement					
5S		X			Each employee has his own working area. They have their own order but that's not effective for shared equipment.
Visual Management	X				Not used.
Standardisation	X				The quality of product is varying based on who manufacture it.
Problem Solving	X				There is no problem solving activities. When they face a problem they solve it for daily purpose. They can face same problem again in future.
SMED	X				There are no SMED activities.
Dynamic Capabilities					
Networking and Collaboration Capability	X				Owner does not use his own network. He does not think that his network can contribute his business.
Environmental Scanning Capability	X				Scanning activities is very limited. Usually customers came with an catalogue picture and ask them to produce it. For different opportunities, they have an attitude that they do not receive any support from government or do business with government.
Innovation and Product Development Capability		X			Source of innovation is customer requests. When customer asks something different, they are able to produce it.
Imitation/Replication Capability			X		Imitation capability is very high. They can produce all type of furniture.
Reconfiguration Capability	X				The industry has changed in recent years and will change as well. But they are not changing their business due to the cost of new machines. They still have many old type of equipment, eventhough they do not use them.
Marketing and Sales Capability	X				This is their main problem. They do not focus on marketing activities too much. Their customers just came to them because they know them from old experiences. They do not do anything to attract new customers.
Decision Making Capability		X			Owner says that he is considering from different perspectives and shares these ideas with stakeholders. Then, they make a decision all together.

Company Issues

At first maturity assessment, my semi-structure interview is designed to understand company current issues. Manager mentioned some of company issues and also some others are observed as follow:

- Marketing capability, sales numbers are very low. Owner was considering shutting down the business last winter. They do not have any marketing strategy.
- Productivity, there are some operational problems especially at furniture installation process.
- Organisational culture is not participative. Employees do not like to contribute any further than their daily tasks.
- Empowerment problem, owner has full control of all processes and it causes some problem. However, he does not aware of those issues.
- Lack of strategy, there is no clear strategies in the firm. This cause decision making problems and prevent firm to develop certain organisational capabilities.

Designing Intervention

Interventions are designed to solve company problems and also develop certain capabilities. Beginning point of the intervention design was identifying company issues. After problems identified, possible solutions are considered and interventions are designed as table – 2 represents the interventions and their purposes. Figure – 2 illustrates the link between interventions, company issues and organisational capabilities.

Table – 2 Intervention list

Interventions	**Aimed Problem**	**Aimed Capabilities**
Continues improvement training is delivered to all employees to make them think different than before.	Productivity, Culture	CI, Employee Participation, Learning
5S training is given by implemented at one of the working area.	Productivity	CI, Employee Participation, Learning
Creating a product catalogue would help them to show more furniture to their potential customers.	Low sales	Marketing and Sales Capability
Showroom layout planning is needed to attract customers to take a tour inside the showroom.	Low sales	Marketing and Sales Capability
Organisational structure change by training most experienced employee as an operation manager.	Culture, Empowerment	Empowerment, Employee participation, Environmental scanning, Networking and collaboration, Decision making capability
Developing collaboration with other local businesses such as wedding saloons, white good retailers, or households sellers.	Low sales	Marketing and Sales Capability, Networking and Collaboration Capability
Developing customer engagement to increase sales and loyalty.	Low sales	Marketing and Sales Capability, Innovation and product development Capability
Developing a strategy and share this strategy with employees.	Strategy	Strategy development and implementation capability, Decision making capability
Establishing a website to make their business visible to online search.	Low sales	Marketing and Sales Capability,

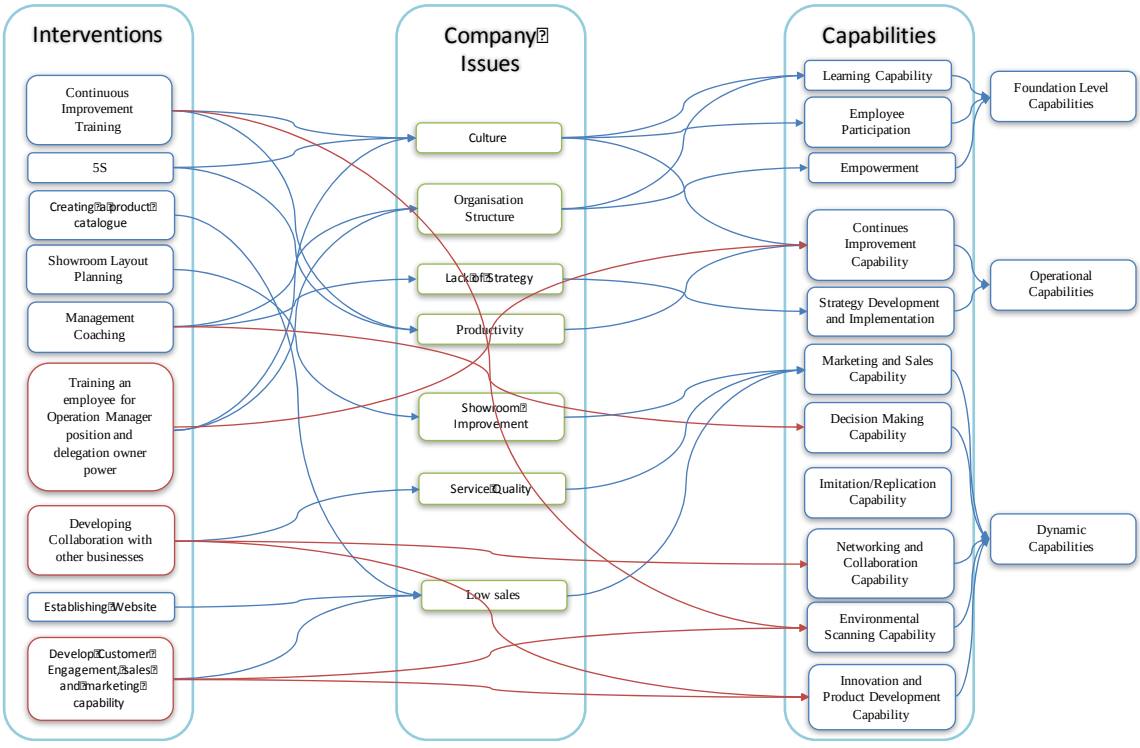


Figure – 2 Intervention, issue and capabilities relationship map

Implementation of Intervention

Implementation of interventions in firm A was more successful than any other firms. Especially, organisation structure change has significant impact on development of other capabilities. Owner created more slack time to focus on marketing and networking activities. Positive development is observed at marketing and sales capability after a while. However, there still improvement and development opportunities for most of the organisational capabilities.

Results of Intervention

Two days spent in organisation to observe results of interventions and assess final maturity assessment. It was expected to not observe significant changes especially foundation level capabilities as they require more time to develop. Results are shown at final maturity assessment as Table – 3 represents.

Table – 3 Final maturity assessment

Capabilities	Capability Maturity Level				Interventions									**Explanation**
					I	PI	I	I	PI	PI	I	PI	PI	
Foundation Level Capabilities	Basic	Intermediate	Advanced	Leading	CI Training	5S Training	Developing Strategy	Organisation structure change	Developing Collaboration	Customer engagement	Website	Showroom improvement	Products Catalogue	
Culture		**XX**												
Participative Culture	X→				+	+		+						Employees share their ideas more than before
Empowerment	X→							++						Manager delegated his authority.
Learning	X				+	+	+		+					Interventions have positive impact on learning capability but it is still early to say its maturity level is changed.
Operational Capabilities														
Strategy Development and implementation		**XX**												
Strategy development	X→						++							They defined their strategy.
Strategy implementation	X→						++							They started to implement their strategy as well.
Continues Improvement		**XX**												
5S	X→				+	++								Standard places identified for shared

															equipment. Standard check lists are prepared for preparation of installation process.
	Visual Management	X				+									Not used.
	Standardisation	X →				+									Operation manager is monitoring other employees and check quality of products.
	Problem Solving	X →				+									More people are involved with problem solving activities. However, there is still not a methodological implementation.
	SMED	X													There are no SMED activities.
Dynamic Capabilities															
Networking and Collaboration Capability		X →							+	++					Owner started to visit his friend businesses. Spend time to find good collaboration opportunities.
Environmental Scanning Capability		X →							++	+					Owner is visiting local big furniture showrooms to understand trends in the marketplace. But there are still improvement opportunities. If they can hire someone for showroom, he can have more time to attend EXPOs.
Innovation and Product Development Capability			X							+	+				They are able to respond customer needs. No observable change.
Imitation/Replication Capability				X											No observable change.
Reconfiguration Capability		X													No observable change.
Marketing and Sales Capability		X →						+		+	+	++	+	++	They have increased their sales. They are using different channels to access more and more customers
Decision Making Capability		X						++							Operation manager has power for some decisions. But still not an observable improvement.

Conclusion

In firm A, developments of organisational capabilities are observed. Interventions are mostly implemented at firm A. Organisational structure change create positive impact on the development of the most of the capabilities. As a part of PhD research, the time were not enough to observer changes in learning capability.

Appendix V – Case Report; Firm B

Introduction and Background

Firm B is founded to sell accessories for door and window production in 1996 then they began to produce metal and plastic parts for door and window production in 2001. Their production begun with 2 employees and 1 injection machine and today they hire 10 people with more machines. They sell their products northern black sea region of Turkey and business-to-business type of business. Some of their products can be seen at Figure – 1. This firm is a family business as well two brothers founded the firm and all assets belong two of them equally.

Figure – 1 Some of their products

Initial Diagnostic

Culture

Most of the employees are relatives of the owner and they all know each other very well. Thus, employees act more relax than they should. Education level of employees is very low such as some of them do not have any school education. There is only one college graduate who is responsible to design moulds and maintain machines to work. This is a family business and two brothers are running all business. One responsible at production to monitor workers and production process. Other one is responsible for sales and accounting. As a result of my observations and conversations, command and control culture is dominant at this firm.

Learning Capability

Employees are not willing to learn more than what they need to know for operating tasks. Thus, it can be suggested that employees are not learning oriented. However, one of the owners who is also manager and one employee who has college degree are open to learn new things. Manager, who was an elementary school teacher in the past, explains his thoughts about learning activities as *"I am trying to find a way to produce new products each year so*

we can improve our business. We face a challenge with our employees. There is only one college graduate and rest of the employees are here just to make money. Their contribution to business is only to produce products and they do not even try to improve their current work process." Furthermore, based on my observations I can conclude that learning is not encouraged at this firm at all. As a result, it can be concluded that learning is not encouraged and very limited at this firm.

Operational Capabilities

Manager defines their mission as *"to provide high quality products on time"*. However, there is no such strategy to support this statement and employees has no idea about their priorities. Moreover, owners are not able to make a clear definition of their strategy. Their operations are not designed based on a strategy. I observed many breakdowns and slack machines while they had issue to supply products their customers. For instance, they waited around 4 hours for O2 tube and a machine could not work that period. Productivity level of the machines are very low and manager also states this problem as *"We are not able to fulfil our customers' request. If I was able to produce more, I can sell them as well."* Even though, they are aware of productivity problem, they are not able to solve this issue by themselves. I could not observe any improvement activities as well. As a result, maturity level of operational capabilities are basic.

Dynamic Capabilities

Dynamic capabilities of firm have better positions than its operational capabilities. Collaboration and scanning capabilities of firm is developed that can be understood from recent years. They have received funds from different government support organisation such as support to buy new machines, hire skilled people and get salary support from government. They have collaboration with those organisations at the same time they are scanning new collaboration opportunities. They are good at introduce new products every two years. They have innovative solutions and manager explain their experience as "A part of door locker needs to be left or right side and our customers cannot always calculate right number and sides. Thus they were complaining about this. Last year, we introduce a new product that can be used for bot side and our customer were happy with our solution." As a results, it can be stated that their dynamic capabilities are more developed than their operational capabilities.

First Maturity Assessment

Table – 1 First maturity assessment.

Foundation Level Capabilities	Basic	Intermediate	Advanced	Leading	Explanation
Culture					
Employee Participation	X				No teamwork. Employees do not contribute for any decisions.
Empowerment		X			Owners shared responsibilities and skilled employees have their authority as well. However, it can be better.
Learning	X				Learning activities are limited with 2 people in the organisation.
Operational Capabilities					
Strategy Development and implementation					
Strategy development	X				They don't have clear definition of strategy.
Strategy implementation	X				They are not following any strategy.
Continues Improvement					
5S	X				There is no standard order any part of business.
Visual Management	X				No sign at all.
Standardisation	X				
Problem Solving	X				No problem solving activities. Their approach to problem is when something broke, just fix it.
SMED	X				No SMED activities.
Dynamic Capabilities					
Networking and Collaboration Capability			X		Networking and collaboration activities are important for owner. He always attend sectoral meetings, visiting universities and government support organisation.
Environmental Scanning Capability			X		Scanning activities are limited however very effective.
Innovation and Product Development Capability		X			Motivation of their innovation is customer requests and they can respond some of them.
Imitation/Replication Capability	X				They want to imitate different products however they do not have skilled personnel and machines.
Reconfiguration Capability		X			Their business path shows that they are able to make changes in their business.
Marketing and Sales Capability	X				They have basic marketing capabilities.
Decision Making Capability		X			Decision making process is more participative due the authority is shared within owners. Thus they make important decisions together

Company Issues

Our first interview some of company issues are explained by owner as follow:

- Skilled employees, finding skilled employees is regional problem however, this firm faces more difficulties due to their location where they are far away from city centre and employees need to use at least two different busses to come work everyday.
- Low productivity was another problem. Although their equipment are new, they have face so many breakdowns such as long setup times, unexpected mistakes, lack of supplement, material issues.
- Long lead times are another problem for organisation. They are not able to response orders in short period. Their average lead-time is 3 weeks (20 – 25 days) which owner is also aware of this problem.
- They would like to expand their market. However, their operations are not supporting their marketing activities. Thus, they do not try to expand their market.
- Organisation culture is not participative. Employees seem happy with their job but they do not contribute to improvement activities. This is another problem I observer when I visited the company.
- Lack of strategy is another problem that organisation face.

Designing Intervention

Interventions are designed to solve current organisation problems and contribute development of capabilities. Table – 2 illustrates interventions, aimed problems and aimed capabilities.

Table – 2 Interventions, Issues, and Capabilities

Interventions	**Aimed Problem**	**Aimed Capabilities**
5S training are delivered to employees.	Productivity, Long lead times	Employee participation, Learning, Continuous improvement
SMED training is delivered to employees	Productivity, Long lead times	Learning, Continuous improvement
Organisation structure is slightly changed and more responsibilities are given to experienced employee	Empowerment, Organisation culture	Employee participation, empowerment,
Preventive maintenance program is created for equipment	Productivity	Continuous improvement
Suggestion scheme system is introduced.	Productivity	Learning, continuous improvement, employee participation, environmental scanning
Purchasing new equipment	Product variety	Innovation and product development, marketing and sales
Developing customer engagement and creating customer database	Product variety, Marketing and sales	Innovation and product development, marketing and sales, networking and collaboration
Collaboration with support organisation and employment agencies	Skilled employee	Learning, continuous improvement, innovation and product development
Strategy development training for owner/manager	Lack of strategy	Decision making, strategy development and implementation
Management coaching	Lack of strategy, empowerment, organisational culture, productivity	Strategy development and implementation, Decision making, Continuous improvement, Learning
Establishing website	Entrance to new markets	Marketing and sales, networking and collaboration

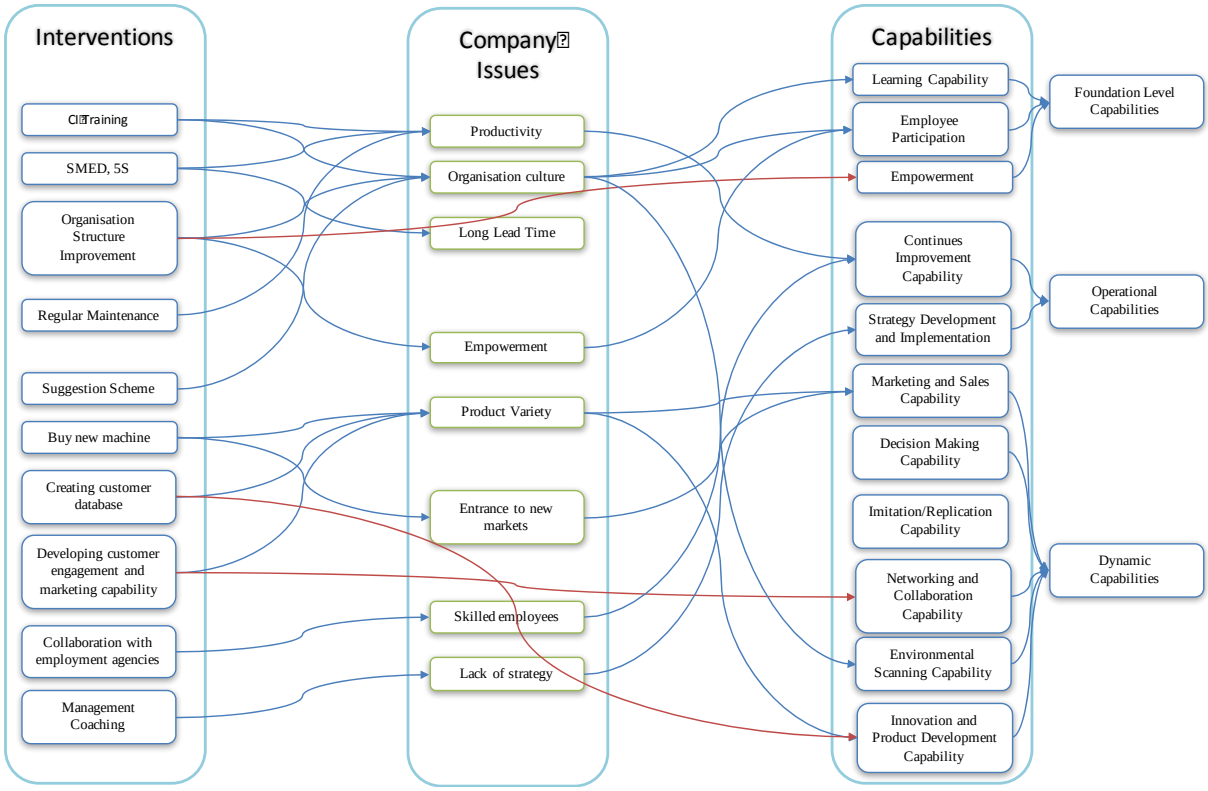


Figure – 2 Intervention, Issue and Capability relationship

Implementation of Intervention

After designing interventions, a descriptive report is prepared and delivered to owner and explained what, how, and why they need to do. Firm B made some good improvements in certain areas however they could not implement some other interventions as well. Some of problems were more complex such as finding skilled employees. Although they have contacted with employment agencies, they could not hire new employees. Finding employees who works in manufacturing is really hard at the region. Furthermore, they could not start to use their new machine due to unskilled employee. On the other hand, they increased their productivity. For instance, they have made a change for working time of skilled employee. He came 1 hour late and leave 1 hour late, all maintenance and setup processes are made after day-time shift and they do not need to pay for overtime.

Results of Intervention

Results show that there are still improvement opportunities in certain areas. However, there are good improvements. This shows that firm has a intention to develop capabilities but they do not know how to do it.

Table - 3 Final maturity assessment

Foundation Level Capabilities	Capability Maturity Level				Interventions										Explanation
					PI	PI	I	PI	PI	PI	I	PI	F	PI	
	Basic	Intermediate	Advanced	Leading	SMED	5S	Developing Strategy	Organisation Structure Change	Collaboration with agencies	Suggestions Scheme	Website	New Equipment	Maintenance Program	Developing Customer Engagement	
Culture															
Employee Participation	X					+		+	+	+					There was not observable improvement. Only skilled employee was contributing for improvement.
Empowerment		X →						++							Positions and responsibilities are redefined and employees know their responsibilities. They have right to make some basic decisions now.
Learning	X				+	+				+					Learning is still limited with few people in organisation.
Operational Capabilities															
Strategy Development and implementation															
Strategy development	X →						++								They develop their strategy.
Strategy implementation	X →						+								They partly implement their strategy.

Continues Improvement																
	5S	X	→				++									Employees have begun to change their behaviour. They try to put everything in an order.
	Visual Management	X														No change.
	Standardisation	X												(+)		No observable change
	Problem Solving	X	→								++			(+)		Skilled employee started to solve problems in operations.
	SMED	X	→			++										They moved setup process after shift finished.
Dynamic Capabilities																
Networking and Collaboration Capability				X					+						+	Networking and collaboration activities are important for owner. He always attends sectorial meetings, visiting universities and government support organisation.
Environmental Scanning Capability				X					+	+	+					Scanning activities are limited however very effective.
Innovation and Product Development Capability			X										++		+	Motivation of their innovation is customer requests and they can respond some of them.
Imitation/Replication Capability		X														No observable change.
Reconfiguration Capability			X													No observable change.
Marketing and Sales Capability		X	→									++			++	They established websites, introduce new products, visiting more customers and collect some feedback about their product. They also collaborate some sale agencies to sell their products.
Decision Making Capability			X	→												They have started to use boards to follow their short-term goals. Decisions are made based on a process now.

Conclusion

Implementation of interventions observed and some company issues are solved and development of certain organisational capabilities are observed as final assessment demonstrates.

Appendix VI – Case Report; Firm C

Introduction and Background

Caglar Ambalaj is founded to provide carton boxes to other local businesses in 2000. They began their journey with 7 employees and now they employ 22 workers (Average employee number is 19). They produce carton boxes with different specifications.

Initial Diagnostic

Culture

Manager of the firm is also owner of the firm. He made all decisions by himself from purchasing to delivery of a product. He assigns daily tasks every morning and monitors all employees by walking into production floor or checking financial reports. He spends almost all his time within the firm. On the other hand, employees do not participate any kind of decision making activities or do not share their ideas with the manager and other employees. They basically do their daily tasks and usually when they find a better job opportunity, they leave the firm. As a result of those signs, it can be concluded that there is command and control type of organisational culture.

Learning Capability

At the individual level, owner of the company open to learn new technology, material and products. However, he does not spend a lot of his time to search new knowledge, he benefits from his network. For example, he was working one of the biggest box producers in Turkey 30 years ago and he still have friends in that company and they do business together. He can learn from his friends any new technology or raw material. Also, he attends local trade organisation meetings and sectorial expos. But as he is open to learn new things, employees do not open to learn anything at all. For instance, an employee said at a conversation "*I don't really know what that part of machine is for. I am just using this part*". Some other employees says even we bring new ideas or learn new technologies, there is no one listen us. Furthermore, employees do not know what improvement is. When I ask them "*How can you improve your current work place?,* answers were similar "*There is totally automated machines that can do faster and higher quality and requires less people*". All these observations and conversations indicate that learning capability of this firm is very limited.

Operational Capabilities

Owner of the firm claims that all equipment are purchased based on their strategy and he makes their strategic statement as follow: *Producing high quality and customized products for local market; providing special solutions to their customers*. He can explain why their equipment is chosen for mid-level technology to be able to produce less but more variety. Majority of their customers are small businesses and there are some local big companies as well. They have different strategies for small and big companies. They always have stocks for big companies products to reduce their customer inventory cost so their customers will continue to work with them. For small companies, they have more flexibility due big producers are far and they are not producing low volumes. In this market, they do not face a competition. However, owner can make this statement and develop it based on facts. He does not share their strategy with employees and employees do not know what the strategy of their firm is. Thus, they face strategy implementation problems.

Continuous improvement activities do not exist such as 5S, Visual management, Standardisation, Problem solving or SMED. As it is mentioned before at learning section, employees do not know what improvement is. They do not take any role to make improvement at their job. Also, management team does not ask them to bring new improvement ideas. As a result, it can be stated that operational capabilities are not developed in this firm.

Dynamic Capabilities

Sensing activities within the firm is limited to owner. Owner only attends some expos and trade organisations meeting when he has time for this. Employees do not have any intention to search new ideas or market place. Seizing process is also not developed due all decisions are made by owner. There is no participative decision making process in the firm. However, when owner found an opportunity, firm can quickly invest such as recent years they have invested to a new production line for plastic bottle injection. This decision made by owner himself with his consideration. After a while later, they could not compete with big competitor and their investment is idle now. Leveraging capability is also limited but better than other capabilities. They have changed some business models at local market. For instance, pitta bread with cheese or mince is very popular food at local market and restaurants was wrapping these pitta breads with paper. They produce customized small boxes similar to pizza boxes and changed the local

market 10 years ago. Their transforming capability is not developed. They do not follow market changes and technological changes due to the expenditure of new technologies. They only invest when they need to increase their capacity.

First Maturity Assessment

First maturity assessment of case A is shown at table – 1.

Table – 1 First Maturity Assessment

Foundation Level Capabilities	Basic	Intermediate	Advanced	Leading	**Explanation**
Culture	**XX**				
Employee Participation	X				Employees do not involve any improvement activities or do not try to help each other. Each employee focus on their daily tasks.
Empowerment	X				Owner control all organisation. He monitor every activity within the firm. He doesn't share his power with anyone else.
Learning	X				Learning activities is not encouraged in this organisation.
Operational Capabilities	**XX**				
Strategy Development and implementation		**XX**			
Strategy development		X			They have a strategy but only owner knows this strategy and it`s not written anywhere.
Strategy implementation		X			It is clearly can be seen that strategy is important factor to designing production process. However, it cannot be seen any other activities such as marketing and collaboration.
Continues Improvement	**XX**				
5S	X				There is no 5S activities at all.
Visual Management	X				
Standardisation	X				They do not have standardisation equipment to reduce variation in production process.
Problem Solving	X				Problems are not seen as a problem.
SMED	X				They do not see change-overs as a waste.
Dynamic Capabilities		**XX**			
Networking and Collaboration		X			They use their network efficiently but they are

Capability					not trying to
Environmental Scanning Capability		X			Scanning activity is limited with owner ability. He does attend sectorial meetings, expos when he has time.
Innovation and Product Development Capability			X		Innovation needs arise with customer needs at micro enterprises. This company provides innovative solutions to their customers by designing new type of boxes.
Imitation/Replication Capability		X			They can produce limited variation of boxes due to their production capability.
Reconfiguration Capability		X			They can introduce new equipment and products but financial limitation is exist.
Marketing and Sales Capability		X			They have advantages such as being close to their customer, being alone in the area, and known for a long time in the market.
Decision Making Capability		X			Decisions are made by owner and there is no methodological process.

Company Issues

Our first interview some of company issues are explained by owner as follow:

- Skilled employees, owner was not happy with their employees. Employees are not improving themselves. In addition, a new employee mostly quits after 6 months later due to low salary or they find better job opportunity.
- Low productivity, productivity is low due to production is depend on human performance more than machinery. There are some issues at changeovers and layout plan.
- Standardisation problems, they have problem with standardisation at production. They need some equipment such as temperature gage to monitor heat at glue but they do not have. This problem causes quality problems at products.
- Entrance to new markets, they do not have required experience and knowledge.
- Lack of strategy
- Command and control culture prevent employee participation.
- Wrong marketing strategy.

Designing Intervention

Interventions are designed to solve company problems and also develop certain capabilities. Beginning point of the intervention design was identifying company issues. After problems identified, possible solutions are considered and interventions are designed as follow;

Table – 2 Interventions with aimed problem and capability

Interventions	**Aimed Problem**	**Aimed Capability**
Buying new monitoring equipment to increase quality of product and reduce variation on production process.	Standardisation	Operational Excellence/CI
5S to improve working environment and increase productivity and safety.	Standardisation/ Productivity	CI
SMED to improve changeover times and increase bottleneck process capacity.	Productivity	CI
Suggestion scheme to encourage employees to bring new ideas and involve with management.	Employee Involvement	Organisational Culture
Training an employee for continuous improvement activities to follow and continue improvement activities within the firm.	Sustainability of CI	CI/ Organisational Culture
Management coaching to delegate authority to lower level and emphases importance of strategic activities so owner can focus more strategic activities than operational activities.	Empowerment	Organisational Culture/ CI/ Dynamic Capabilities
Developing collaboration with universities and government support organisations to receive more support from universities and government.	Networking & Collaboration	Networking & Collaboration Capability
Develop customer engagement, sales and marketing capability to increase sales, reduce production cost and increase customer satisfaction and loyalty.	Marketing problems	Marketing Capability

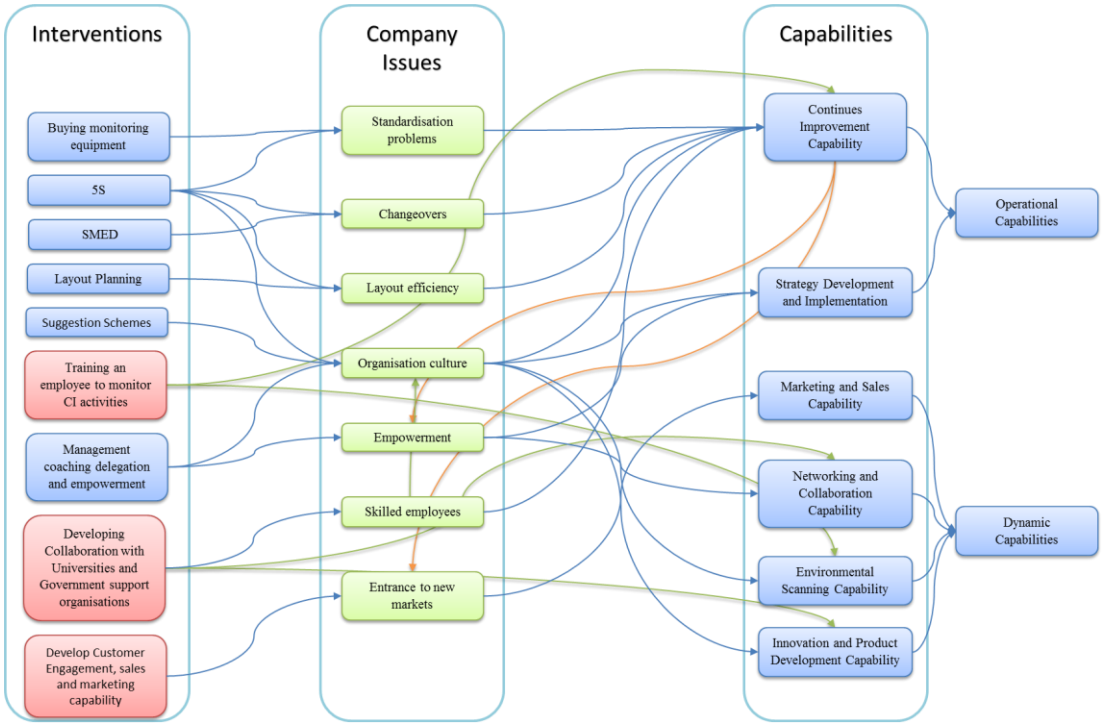


Figure -1 Interventions with aimed problems and capabilities

Implementation of Intervention

At intervention implementation stage, I did not involve to implementations rather than monitor them to distinguish this research from consultancy. Thus, I prepared an action plan for all interventions explained with all details and required training such as management coaching and 5S or SMED trainings.

Some difficulties are identified during implementation of interventions such as lack of education, financial problems, and resilience against change. Employees could not agree on leaving a clean working place or make faster changeovers. Moreover, the authority wanted to see working environment clean and in order. However, first priority was production. Thus, owner could not support enough to break this cultural resilience. Some intervention faced financial problems such as buying some measurement equipment to reduce variation at production. They could not leave some budget to buy those equipment. Some interventions are failed due to lack of education such as suggestion scheme. Suggestion cards are introduced and explained a reward system to employees, number of ideas were considerable but all ideas was related with buying newer machines or reporting a problem at the machines.

Results of Intervention

As a result of interventions, in some areas some improvements are identified. On the other hand, there are still same problem after interventions. Improvements at certain type of capabilities are shown at table – 3.

Table – 3 Final Maturity Assessment

Capabilities	**Capability Level**				**Interventions**								**Explanation**
					F	**F**	**PI**	**PI**	**I**	**PI**	**I**	**F**	
Foundation Level Capabilities	Basic	Intermediate	Advanced	Leading	**Training a CI**	**New Equipment**	**5S**	**SMED**	**Suggestion Scheme**	**Management Coaching**	**Development Cus. Eng.**	**Collaboration Development**	
Culture	**XX**												
Employee Participation	~~X~~ →				(+)		+	+	++	+			Employee participation is increased slightly
Empowerment	X				(+)		(+)		(+)	(++)			Stabile due to owner does not want to share his authority.
Learning	~~X~~ →				(+)		+	+	++			(+)	Employees are more open to learn new things.
Operational Capabilities													
Strategy Development and implementation		**XX**											
Strategy development		X											
Strategy implementation	~~X~~ →									++			Strategy is shared with employees and they are more aware what is expected from them
Continues Improvement C.	**XX**												
5S	~~X~~ →				(++)		++						In some workstations 5S is implemented.
Visual Management	X				(++)		(+)						
Standardisation	X				(++)	(++)							Economic limitations.

	Problem Solving	X →				(++)		+	+	++				Employees started to report problems and suggest possible solutions.
	SMED	X →				(++)			++			+		They identified causes of long CO times and eliminate those causes.
Dynamic Capabilities			**XX**											
Networking and Collaboration Capability			X								+		(++)	Owner states he tries to attend more meeting and meet more people. However, he is so busy with operations. Thus, this area is still stabile.
Environmental Scanning Capability			~~X~~ →			(+)				+	+		(++)	Some employees are started to search online and find some ideas to write another suggestion card to get some awards.
Innovation and Product Development Capability				~~X~~ →							+	+	(++)	Employees help each other to increase production quality and this give them to
Imitation/Replication Capability			X											
Reconfiguration Capability			X											
Marketing and Sales Capability			X →									++		Giving customer better prize and higher quality.
Decision Making Capability			X											

Conclusion

Implementations of most of the interventions are failed due to the owner did not want to delegate his authority. Development of some organisational capabilities are observed which were not related to empowerment.

Appendix VII – Case Report; Firm D

Introduction

Firm D is founded to produce organic jams (without any preservatives) in 2013. The firm began its journey with owner/founder. Today they hire one full time and one part time employees. They serve breakfasts at their restaurant and sell their products as well. They produce different types of jams which some of them unique for them. Figure – 1 represents some of their products.

Figure – 1 Some of their products.

Initial Diagnostic

Culture

It is hard to make any statement about organizational culture due to there are only 2 people in this firm. Owner does and controls all activities in firm. Employees only help to increase production capacity and controlled by owner. Moreover, owner has very open mind. This seems their advantage.

Learning Capability

Learning activities are limited with owner`s capacity. She tries to learn new things, looking for new products ideas.

Operational Capability

Productivity is very low due all their production is labour intensive. There are no activities at firm to increase productivity. On the other hand, there is no strategy as well. Lack of strategy cause low sales rates.

Dynamic Capability

Networking and collaboration capability of firm is developed very well. She says that " *I contact with all organizations in Trabzon to get funds and I received funds from 4 different organizations and started this business with those funds*." Furthermore, innovation and product development capability is also developed. She says, "*I am trying to produce new kind of jams with different fruits and vegetables. I have made different jams with local fruits for the first time.*" Moreover, marketing and sales capability is very limited. They do not have any marketing activity as well. Environmental scanning capability is not developed as well. She explains this as "*I am not a good computer user myself and also I cannot find much time for searching new things at computer. If I saw something new in a visit, I ask questions to learn more about it*." At general dynamic capabilities are in better position than operational capabilities.

First Maturity Assessment

First maturity assessment is made after first week spent at firm as table – 1 represents.

Table – 1 First maturity assessment of Firm D

Foundation Level Capabilities	Basic	Intermediate	Advanced	Leading	Explanation
Culture	**XX**				
Employee Participation	X				Employees only increase capacity. Nothing else is expected.
Empowerment	X				Owner monitors and controls all activities
Learning	X				Learning activities is limited with owner
Operational Capabilities					
Strategy Development and implementation	**XX**				
Strategy development	X				No strategy
Strategy implementation	X				No strategy
Continues Improvement	**XX**				
5S	X				There are no 5S activities.
Visual Management	X				No visual management activities
Standardisation	X				
Problem Solving	X				No problem solving activities.
SMED	X				Not applicable
Dynamic Capabilities		**XX**			
Networking and Collaboration Capability			X		Owner cares her network and aware of importance of networking and collaboration activities.
Environmental Scanning Capability	X				Scanning activity is limited with owner ability.
Innovation and Product Development Capability		X			There are some new product development activities
Imitation/Replication Capability	X				Not applicable
Reconfiguration Capability	X				Not applicable
Marketing and Sales Capability	X				No marketing activates.
Decision Making Capability	X				Owner makes all decisions by herself without any systematic approach.

Company Issues

Issues are identified at first interview as follow;

- ✓ There is no marketing or operation strategy
- ✓ Keeping fruits and vegetables fresh.
- ✓ They are facing some packaging problems such as glasses are broken on delivery.

- ✓ Finding organic fruit and vegetable is another problem. Especially, collecting forest fruits is big issue.

Designing Interventions

Interventions are designed to solve company problems and also develop certain capabilities. Beginning point of the intervention design was identifying company issues. After problems identified, possible solutions are considered and interventions are designed as table – 2 illustrates;

Table – 2 Interventions, Issues and Capabilities

Interventions	**Aimed Problems**	**Aimed Capabilities**
Management coaching	Lack of strategy	Learning, CI, Strategy development, Marketing and sales
5S	Productivity	CI, Learning
Establishing website	Marketing and sales	Marketing and sales, Networking and collaboration
Customer engagement	Marketing and sales, Lack of strategy	Networking and collaboration, Environmental scanning, Strategy development and implementation, Learning
FIFO	Productivity	Continuous improvement
Collaboration with upstream and downstream in supply chain	Marketing and sales	Networking and collaboration,
Strategy development	Lack of strategy	Strategy development and implementation, decision making
Delivery improvement	Marketing and sales	Marketing and sales, continuous improvement
Using social media	Marketing and sales	Marketing and sales, continuous improvement
CI training	Productivity	Continuous improvement,

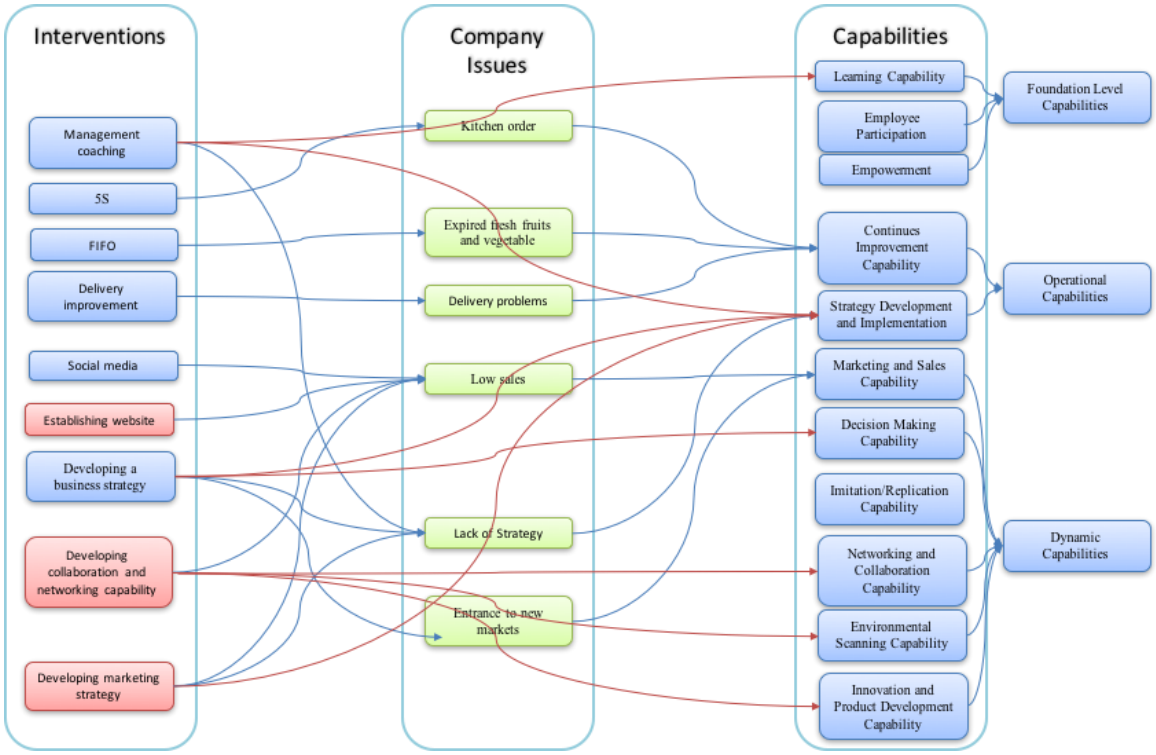


Figure – 2 Interventions with aimed problems and capabilities

Implementation of Interventions

Interventions are implemented except using social media. Owner could not use social media effectively due to lack of knowledge and time. Improvement are observed at development of certain capabilities after implementation of interventions.

Result of Interventions

As a result of interventions, in some areas some improvements are identified. On the other hand, there are still same problem after interventions. Final maturity assessment is illustrated at table – 3.

Table – 3 Final maturity assessment

Foundation Level Capabilities	Capability Maturity Level				Interventions								Explanation
					PI	I	I	PI	F	PI	I	PI	
	Basic	Intermediate	Advanced	Leading	5S	FIFO	Packaging Solution	Collaboration with farmers	Collaboration with agencies	Customer engagement dev.	Website	Developing strategy	
Culture	**XX**												
Employee Participation	●→	X			+								Employee knows that there are more expectation from her such as being nice to customers or keep everything clean and in order
Empowerment	X												Owner monitors and controls all activities
Learning	X												Learning activities is limited with owner.
Operational Capabilities													
Strategy Development and implementation	**XX**												
Strategy development	●	→	X										Marketing and sales strategy developed.
Strategy implementation	●→	X											Some difficulties is exist such as lack of sales training
Continues Improvement	**XX**												
5S	●→	X			++								Kitchen has its rules and everything has dedicated place but still can be improved.
Visual Management	X												Still no visual management activities

	Standardisation	●→	X				+	+	+					Packaging issues are solved.
	Problem Solving	X												Owner does not see many thing as a problem so there is still not any activity.
	SMED	X												Not applicable
Dynamic Capabilities			**XX**											
Networking and Collaboration Capability				X										Owner cares her network and aware of importance of networking and collaboration activities.
Environmental Scanning Capability		●→	X											Owner spends more time to find new customers and looking for new product ideas.
Innovation and Product Development Capability			X											There are some new product development activities such as trying new fruits to create different tastes
Imitation/Replication Capability		X												Not applicable
Reconfiguration Capability		X												Not applicable
Marketing and Sales Capability		●→	X					+		++	+	++	+	Marketing strategy worked very well. Sales are increased.
Decision Making Capability		X											+	There is not significant change.

Conclusion

The implementation of interventions had positive impact on marketing capability which was the essential as the firm is very early stage of its evolution. Implementation of interventions was mostly successful. Owner of firm D is open to new knowledge and willing to improve her business. Thus, its seems that development of organisational capabilities will continue.

APPENDIX VIII – SWOT Analysis of Final Framework

Strength	Weakness
➢ Final framework provides an integrated model of all type of organisational capabilities. ➢ It represent how organisational capabilities develop in micro manufacturing enterprises. ➢ It provides which organisational capabilities are relevant to micro manufacturing enterprises. ➢ It shows where to begin for development of organisational capabilities as learning and culture.	➢ It includes organisational capabilities only relevant to micro manufacturing enterprises. ➢ It does not provide the interventions which has been tested. ➢ It does not show the relationship between specific organisational capabilities. ➢ In some cases, capability development may begin at operational or dynamic capabilities level based on the situation of the business.
Opportunities	**Threats**
➢ It can be used as a guide for capability development by owners and practitioners. ➢ It can be used to develop a regional development programme by government support organisations. ➢ It can increase the attention of academics on micro enterprises.	➢ It is tested in micro manufacturing enterprises, it can face some critical criticisms as it does not include different type of micro enterprises.